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BARK AUBURNDALE'S EVENTFUL TRIP.

The bark Auburndale, owned by John S. Emery & Co., 114 State street, Boston, recently reached that port in a crippled condition and after most eventful experiences since leaving Norfolk in March last. She sailed from the Virginia port March 20, coal laden for Porto Rico. Severe weather was experienced for several days, but the vessel made fair progress. On March 30, after the wind had twice hauled around the compass, a terrific squall of cyclonic fury struck the deep laden craft. The wind, coming from the north, caught the bark, which was under upper and lower topsails, aback, and the mainmast gave way at the eyes of the rigging, and, together with the maintopmast and all the yards, fell over the side in a tangled mass. The mizzentopmast broke off at the cap and also went by the board. In the heavy sea that was running the broken masts were dashed against the vessel's side, threatening to crush in the timbers and send her to the bottom.

Armed with axes the crew set to work to cut away the rigging attaching the masts to the vessel, and after several hours of hard labor she was freed of the dangerous wreckage and quickly righted. When the storm abated stays were rigged to hold the other masts in position, and under scant canvas the vessel continued on to her destination. While assisting the crew in the work of clearing away the tangled mass, Capt. Dow was caught by the maintopmast back stays and was severely injured about the hips and body. He has since nearly recovered. Strange to say, but little damage was done to the hull of the vessel, with the exception of the breaking of her rails and the chafing of her metal by the broken masts. She was not leaking and the ten men on board were in no danger, although a number of them narrowly escaped being crushed under the falling spars.

THE AUBURNDALE UNDER JURY RIG.

The bark made San Juan in due time, and after discharging her cargo, she was ordered to Boston for repairs, as the nearest place where there were facilities for doing the work was St. Thomas, which was dead to windward. The price of towage to that port was exorbitant, so it was decided to return to her home port.

The Auburndale was put under jury rig, with improvised sails, which prevented her tacking and made it necessary to wear ship every time she had to change her course. The foremast was intact and all the sails were set. She also had a few staysails, jibs and spanker, and the mainsail was utilized when it was possible to do so. The vessel was favored with fine weather and made the passage to Nantucket south shoal lightship in nine days. The distance of 1,600 miles was completed in good time.

Capt. George W. Dow was asked for an account of his experiences by the Marine Review and this was his laconic description of it, much, indeed, like a man of action would write:

"On May 7, 1904, on passage from Norfolk, Va., to San Juan, P. I., the Auburndale met with a serious accident, having lost main and mizzenmast and all gear attached when about 500 miles from port of destination. Rigged spars and sails so as to reach port and there discharged cargo and returned home to Boston (light) under jury rig."

The photograph which accompanies this article was made by Mr. H. W. Hoyt of Chicago, who snapped it en route from Jamaica. He, however, was unaware of the vessel's mishap until he reached port and saw it in the newspapers.

MODERN NAVIGATION.

"Modern Navigation," is the title of a book written by the Rev. Wm. Hall, chaplain and naval instructor in the British navy. It is intended primarily as a text-book for students of navigation, and secondarily as a handbook for navigators, and will be found suitable for the various examinations of the royal navy, mercantile marine or the board of education. It does not pretend to be a compendium of all the nautical knowledge, but is strictly confined to three divisions of the subject, namely, the dead reckoning, observations, and mathematical theory. Within these limits it is hoped that the treatment is complete. The idea of position lines has been introduced at the very first as the foundation of modern methods; and the student is strongly advised to plot the position line for every sight. Graphic solutions have been freely used, and every effort has been made to provide the book with clear and appropriate diagrams wherever required.

Special care has been exercised in the treatment of computations. Models of all the various sights are given, worked out in a compact and convenient form for ready reference; extracts from the Nautical Almanac have been inserted (for reference in the working of examples) with the data reduced to such accuracy as is needed in sea-work; also numerous examples for practice are given throughout the book, and the answers to modern needs in practical work, but they include typical questions set in theoretical examinations. Much space has been devoted to charts, machines, and instruments, and the reader will find full accounts of modern labor-saving appliances and books. There are also elementary explanations of compass deviation and tides which may serve as an introduction to larger manuals.

SUEZ CANAL TRAFFIC DURING MAY.

Following is the return of the navigation of the Suez canal for the fiscal month of May, showing the number of vessels, their flags and tonnage:

	Number of Vessels.	Amount of Tonnage.
American	2	8,252
Austrian	10	33,906
British	184	595,865
Danish	3	6,364
Dutch	19	46,976
Egyptian	2	900
French	17	48,872
German	50	180,340
Greek	3	3,604
Italian	5	13,112
Norwegian	3	6,433
Russian	2	4,088
Spanish	2	5,734
Turkish	3	4,212
Total	305	958,658

SUMMARY OF NAVAL CONSTRUCTION.

The monthly summary of naval construction, issued by the bureau of construction and repair of the Navy department, shows steady progress on the various naval vessels. The interesting feature, of course, is the race between the Louisiana and Connecticut. The Newport News ship still maintains her lead. Following is the summary:

Battleships.	Degree of completion. per cent. May 1,'04.	June 1,'04.
Ohio, Union Iron Works	93	94.5
Virginia, Newport News Co	59.4	61.2
Nebraska, Moran Bros. Co	46.9	49
Georgia, Bath Iron Works	52	54.13
New Jersey, Fore River Co	57.6	58.7
Rhode Island, Fore River Co	59.8	60.7
Connecticut, Navy Yard, New York	38.46	42.1
Louisiana, Newport News Co	47.91	49.31
Vermont, Fore River Co	6.8	8.9
Kansas, New York S. B. Co	7.5	9.6
Minnesota, Newport News Co	26.15	29.59
Mississippi, Wm. Cramp & Sons	2.3	3.5
Idaho, Wm. Cramp & Sons	2.2	3.2
Armored Cruisers.		
Pennsylvania, Wm. Cramp & Sons	76.9	80.5
West Virginia, Newport News Co	83.04	85.49
California, Union Iron Works	60	60.5
Colorado, Wm. Cramp & Sons	80.9	84.9
Maryland, Newport News Co	78.88	82.8
South Dakota, Union Iron Works	55.5	57.5
Tennessee, Wm. Cramp & Sons	28.9	34.4
Washington, New York S. B. Co	24.2	29.3
Protected Cruisers.		
Denver, Neafie & Levy Co	99.9	100
Des Moines, Fore River Co	....	....
Chattanooga, Lewis Nixon	80.01	84.23
Galveston, Wm. R. Trigg Co	78	81
St. Louis, Neafie & Levy Co	41.2	42.6
Milwaukee, Union Iron Works	48	50.5
Charleston, Newport News Co	69.7	73.1
Gunboats.		
Dubuque, Gas Engine & Power Co	40	42.5
Paducah, Gas Engine & Power Co	33.6	35.7
Training Ships.		
Cumberland, Navy Yard, Boston	35	42
Intrepid, Navy Yard, Mare Island	16	23.3
Training Brig		
Boxer, Navy Yard, Portsmouth	34	42
Torpedo Boats.		
Stringham, Harlan & Hollingsworth Co	93	96
Goldsborough, Wolff & Zwicker	99	99
Blakely, George Lawley & Son	99	99
Nicholson, Lewis Nixon	99	99
O'Brien, Lewis Nixon	98	98

It is announced that with a view to affording a fair basis between the ships built at government navy yards and those constructed by private ship builders, the navy department has decided to require all the government-built vessels to undergo the tests imposed upon the private-built war ships before they are accepted by the government. It is believed that the rule will make for a better class of work and will be just to the private ship builders.

The steamer Western Star took 7,500 tons of coal into Milwaukee last week, which is the largest single cargo ever received at that port.

SCOTCH SHIPPING LETTER.

Glasgow, June 12, 1904.—Judgment has been given in the Court of Survey held in Glasgow to consider the appeal by Messrs. Wm. Denny & Bros., Dumbarton, against the refusal of the Board of Trade to grant the necessary declaration to enable them to get a passenger steamer certificate for the recently constructed turbine steamer, Princess Maud. The Board of Trade refused the declaration on the ground that the condensers for the turbine machinery had not been tested up to 30 lb. pressure in the presence of their surveyor, and that stays for strengthening purposes which they had specified had not been put in. The effect of the judgment is that the court finds that the steamer is sufficient for the service intended, and that she is entitled to have a passenger certificate. Accordingly the court sustains the appeal but no costs are awarded to either party, upon the ground that the appellants were wrong in their contention that they had no concern with the chief surveyor of the Board of Trade in London, but were bound to satisfy only the local surveyor at Dumbarton, and also upon the ground that if both parties had been less unbending in the attitude they assumed these proceedings might have been avoided. To the judgment of the court there is appended a long "note" in the course of which the technical arguments submitted on either side are repelled. The contention for the ship builders was that the surveyor could not make any demands until the vessel had been completed. The court holding that it was according to practice that the survey should proceed during the construction of the vessel, this contention was repelled. The contention for the Board of Trade, which was also repelled, was that the appeal was incompetent in respect that the test the surveyor demanded was a mere matter and manner of survey, and that the merchant shipping act gives the Board of Trade surveyor the entire discretion as to the matter and manner to be adopted. The court holds that this is not so and that the clause founded on in the Merchant Shipping Act applies only to the issue of regulations and not to the conduct of the survey. The court dealt with the various technical and other questions raised and arrived at the conclusion that the test proposed was a new departure in survey practice, and that as the Board of Trade was the party proposing to depart from use and wont it lay upon them to say that there were new circumstances justifying the new departure. The conclusion arrived at is that in the whole circumstances the demand made by the chief surveyor of the Board of Trade for a test of the condensers was not reasonable.

Much interest is, of course, being taken here, as on your side no doubt, in the rate-cutting war. The opinion prevails in shipping circles that the Cunard company, owing to the facilities they enjoy under the agreement with the Hungarian government will not retaliate on their continental rivals by cutting their continental rates, and that the cutting lines, for self-preservation, will soon revert to the normal rates rather than persist in a policy which must mean very heavy financial loss. Although the two Glasgow lines interested in the Atlantic trade have not yet decided on their policy as regards the war of rates initiated by the German companies, they will have to consider it seriously if the Cunard Line decides to contend with their continental competitors in the matter of fares. Cheap rates from Liverpool to New York will affect not only the Glasgow to New York traffic but also that from Glasgow to the St. Lawrence, as passengers will save money by going round by New York to Canada at £2 plus the train fare from New York. The cut in steerage rates would not affect the Clyde emigrant trade so much as it would have done three years ago. Since then the second cabins have come largely into favor, and numbers of emigrants of the class who formerly traveled steerage are now traveling second class. A Budapest message states that Herr Wiegaud of the North German Lloyd, acting on behalf of that line, the Hamburg-American, the Holland-American, the Red Star, and the Compagnie General du Havre Lines, has applied to the Hungarian minister of the interior for a concession to convey Hungarian emigrants to America.

In connection with this affair it may interest you to have the substance of an editorial in the Glasgow Herald. The Hamburg-American line, it says, has now ranged itself with the Morgan combine and the probabilities are that at no distant date the Cunard company will have to pick up the gauntlet and join with all its wonted energy in the war of Transatlantic rate-cutting. Indeed, if the operations are carried on with the intensity with which they have been begun it will not be an easy matter to circumscribe the area of conflict. However much they may dislike the alternative, steamship companies carrying emigrants to Canadian ports may have no resource but a reduction of fares to the ruinous rates of £2 per head established by the combatants, when the only advantage they can offer for the present excess rate is the modest difference of the railway charges between New York and Montreal. To the outsider the campaign just started is not without its amusing side. But the consideration that the rivalries and jealousies of the carrying companies are serving the providential purpose of increasing that little fund which the poor emigrant must possess if he is to satisfy the requirements of the vigilant officials at Castle Garden, will not yield much consolation to those shareholders who have been accustomed to regard the steerage passenger as a dividend-earning asset and not as a card in the game of "beggar my neighbor." It will be observed that the allies have attempted to justify their action by alleging that the Cunard company's contract with the Hungarian government for the conveyance of emigrants from Fiume was a breach of the agreement under which the Transatlantic traffic has been hitherto worked. But to this Lord Inverclyde has made an effective reply. It is admitted that the Cunard have accepted the Hungarian contract, but in circumstances which imply no infringement of the German monopoly of European traffic elsewhere, since it was the avowed intention of the Hungarian government to resist the obnoxious conditions imposed in Germany, even if it involved the expense of running its own steamers from Fiume. Moreover, Lord Inverclyde adds that by their recent alliance the German and American combinations aimed at the entire domination of the passenger traffic between Europe and the United States. Even commercial wars are not waged with rose water, and the mere threat of a duel alliance such as that described would alone have sufficed to compel the withdrawal of the Cunard company from an agreement which bound it to engagements at which the other contracting parties felt themselves free to snap their fingers. How long hostilities thus begun may endure, and what foolish and suicidal developments may emerge, it is impossible to discern. But it is probable that, whatever the result may be, the Cunard company will not be the one upon which the heaviest burden of loss and suffering will fall.

In April there was a net addition to the British registry of forty-nine vessels, and an aggregate tonnage of 39,981. The total registrations were 134 vessels with a tonnage of 90,214 tons. The additions of steel steamers alone to the United Kingdom registration number forty-eight, and aggregate 80,420 tons gross. Of the eighty-five vessels removed from registry there were sold to foreigners thirty, wrecked eight, stranded three, lost nine, broken up thirteen, abandoned one, collision three, missing three, foundered five, burned one, and other causes nine.

In the new passenger service from Fiume to New York to be established next month by the Austro-Americana Co. there will be one departure every fortnight in each direction. The vessels will call at Trieste and Naples.

There has been another bad time for underwriters, several serious losses having been reported. The British steamer, Den of Seaten, which left London May 4 for Calcutta via Newport, Mon., sank in the Bristol channel after collision with the steamer Shepperton. The Den of Seaton, which was insured in London for £40,000, was a vessel of 3,892 tons and was built at Middlesbrough three years ago by Sir Raylton Dixon & Co., Ltd., and was owned by C. Barrie & Son of Dundee. The report of the total loss of the Spanish steamer Ceres, which foundered 80 miles north of Lanzarote, Canary Islands, also affects underwriters here, as she is insured for £35,000. This vessel left Cardiff with coal on May 8 for Hong Kong. She is one of Rodas's steamers, built at Port Glasgow in 1896 by Russell & Co., and was a tramp steamer of the first class. Another vessel reported ashore and likely to become a total wreck, as she is in a bad position, is the Dredger No. 4. She also is insured in London for £14,000. Underwriters have lost rather heavily when insuring risks on dredgers on voyages to distant stations. In the present case Dredger No. 4 was employed at Saigon. Another casualty, not a total loss, concerns the British steamer Fifeshire, which grounded at English Bank near her destination on a voyage from the Tyne for Buenos Ayres with coal. This steamer is owned by Turnbull, Martin & Co., was built at Clydebank in 1898.

We enter the second half of the ship building year with considerably less promise. Even the trade unions seem to be recognizing that the bustle of present activity is more or less illusory. Mr. Geo. N. Barnes, general secretary of the Amalgamated Society of Engineers, in his annual report states that last year was characterized by dull trade and decreased employment, the donation list reaching dimensions which, barring the period of the lock-out, had not been reached for some ten years. Wage reductions came into operation in Scotland, and on the northeast coast, at Barrow, and at Belfast. These reductions, however, by negotiation with the Employers' Federation so far as England and Scotland was concerned, and with the Belfast ship building firms for Ireland, were delayed and minimized, and speaking generally amounted to 1s per week. The society was, however, convulsed by voting and counter-voting thereupon during the whole time and although the recommendations of the executive council were ultimately given effect to, it was only after an irregular stoppage of work on the Clyde followed by the rejection of three councilmen whose term of office happened to terminate at the time, and who had offered themselves for re-election. These events denoted an amount of unrest and dissatisfaction unprecedented in the society's history, and were fraught, he believed, with more than lay on the surface. In the main they denoted the violent clashing of two antagonistic principles—centralized authority and local autonomy. The first had been imposed upon them by modern conditions and the second had been to many one of the prized features of the society since its inauguration, 53 years ago. How far it might be possible to harmonize these two ideas time alone could tell, but he reaffirmed his conviction that in all questions of trade policy there must be that unity of purpose and control which it was only possible to obtain from a common centre. Let that centre be as close as may be to the membership, let it be brought into contact with the actualities of the workshop as well as with the larger actualities which surround it, let its proceedings even be brought under periodical and critical review, but safety to the society lay, he was convinced, only in yielding due respect to its recommendations and acquiescence in its decisions. Localism in this respect was, indeed, in their internal affairs but a form of that sectionalism which with one voice they decried, when presented externally in the garb of small and ineffective organization. The funds of the A. S. C. at the beginning of the year amounted to £546,367, and at the close to £602,425. The membership is now 95,403, an increase of 2,151 on the previous year.

SAILING SHIP OWNERS' UNION.

Liverpool, June 6.—Following upon the meeting of delegates held in London last week authorizing the formation of the International Union of Sailing Ship Owners the honorable secretary has just sent to all the ship owners who have joined the union a letter in which he states that more than 75 per cent of British, French and German tonnage have joined. The figures are as follows:

	Total tonnage of 1 000-ton vessels and upwards, excluding liners.	Total tonnage entered Union.
Great Britain	1,127,809	848,522
France	299,073	240,605
Germany	365,710	277,822
	1,792,592	1,366,949

From the rules I gather that the only object of the union for the present is to fix minimum rates of freight for the principal voyages in which sailing ships engage, excepting only outward voyages from the United Kingdom or the continent of Europe, for which no rates of freight shall be arranged, each vessel being left free to make the best terms she can. Such owners as have joined the union agree to bind themselves not to accept for the ships which they control less than the minimum rate appointed by the committee for any voyage for which the committee shall have fixed a rate of freight and for all such voyages the various owners are prohibited from chartering except on the recognized terms of charter for the particular trade without any extra commissions. rebates or back-letters. Owners, however, shall be allowed to reimburse the charterers the net cost of any extra insurance the latter may have to pay on the cargo owing to the age or special condition of the ship. Should the minimum rates of freight not be obtainable for any vessel, she shall be laid up until such a rate can be got, or, in the option of the owners she has liberty to leave the port in ballast. The committee are also given power to call upon each member of the union to disclose on oath the rate of freight and conditions of any charter. In the event of any member of the union committing any breach of his undertaking, he shall pay liquidated damages to the committee of $1.20 per ton on the dead-weight capacity of the ship in connection with which the breach has been committed, but the fine will be modified in case it is proved that the breach has been committed unwittingly and through no fault of the member. Only owners of ships of 1,000 tons net register and upwards shall be eligible to be enrolled in the union. The rates which have been agreed upon are not made public, but the scale has been sent round to the members and will come into operation on July 15 next. There is great curiosity in British shipping circles generally as to how this novel and powerful combination of varied interests will work. Some predict failure, while a large majority are confident that ultimately it will become a great success and prove to be the salvation of depressed sailing ship freights. With regard to the Liverpool owners who have stood out against the union, I understand that as the result of a meeting just held, there is a disposition among them to reconsider the matter of joining the union in a more favorable light, and it is said that very shortly the few Liverpool ship owners remaining outside will throw in their lot and receive what benefits the union can achieve for them. On 'Change the union seems so far to have been well received by charterers, who were expected to resent the alleged dictation of the union as to freights and they are even showing a willingness to accept the fixed scale if it will prevent the cut throat competition from which they, as well as the owners, have suffered in the past.

Messrs. Workman, Clark & Co. of Belfast have just launched

a steamer which is the first of three vessels they are building for the United Fruit Co. of Boston. The vessel has been named San Jose and is specially designed and equipped for the carriage of fruit in bulk between the West Indies and the United States. She is one of the largest vessels yet built for this trade, being 343 ft. in length. The San Jose has three steel decks extending all fore and aft, and the cargo space is divided into separate compartments by steel bulkheads, which extend to the upper deck. All these holds and 'tween deck spaces have been insulated and a very complete and efficient system of refrigerating machinery with air ducts to every compartment for the preservation of the fruit during transport, is being fitted by the American Linde Refrigerating Co. of New York. Each hold is fitted with a large hatch supplied with the necessary steam winches, derricks and special appliances for expeditious and careful handling of the fruit cargoes. A large steel deck house has been built on the upper deck amidships, and at the fore end of this house is placed the dining saloon, with passengers' staterooms opening off each side. A stairway from this saloon leads up to a steel deckhouse on the promenade deck, above which are additional staterooms and a smokeroom. Rooms for engineers and officers are provided in the midship deck house and the crew are berthed in a deck house on the after end of the upper deck. The machinery will consist of a set of triple expansion engines of the latest type, with all the auxiliaries necessary for a modern steamer and these will be supplied with steam by three steel cylindrical multitubular boilers, working under Howden's system of forced draft. The vessel and machinery are being constructed under the supervision of the British corporation surveyors to qualify for their highest class.

At the time of writing I have just ascertained that the Manchester Liners, Ltd., who have a service to United States and Canadian ports, and who recently inaugurated a new service from Manchester to the River Plate, are about to further develop the South American trade by running steamers from New York to the River Plate, which trade is at present carried on by the Conference lines. This new service will, it is believed, benefit American shippers to the River Plate.

The Liverpool Underwriters' association report that during the month of May three British steamers of 9,300 tons and thirteen foreign craft of 28,202 tons were totally lost, as compared with six British steamers of 8,646 tons, and eight foreign vessels of 8,643 tons, in May, 1903. During last month also, twenty-three British sailers and 149 steamers, and twenty-seven foreign sailers and 134 steamers were partially lost, the returns for the corresponding period of last year being British, thirteen sailers and 163 steamers, and foreign, thirty-eight sailers and 124 steamers. The causes of loss were: Strandings, 123; collisions, 118; damage to machinery, shafts and propellers, thirty-six; weather damage, thirty-two; fires and explosions, twenty; founderings or abandonments, two, and other casualties, eighteen. The total number of casualties, total and partial losses, were 349, compared with 352 in May, 1903; 362 in May, 1902, and 373 in May, 1901.

There are rumors current on this side that negotiations are proceeding between the Canadian government and Messrs. Petersen, Ltd., Newcastle, and Messrs. Armstrong, Whitworth & Co., Ltd., in connection with the proposed service between the continent of Europe and Canada. The Canadian government have had reason to cancel the contract with a French firm, which was to have provided the service, and it is in consequence of these altered circumstances that the British firms named have become directly interested. If the terms now under negotiation are agreed upon there will be a fortnightly service from Rotterdam and Havre, and the firms named will receive a subsidy of about $150,000 per annum.

With regard to the Atlantic rate war nothing authentic can be gleaned from any of the lines interested as to what will likely be the outcome of the struggle. The reduction of the steerage rate by the American line also is attracting large numbers of British emigrants to the Southampton steamers from all parts of the country, in fact it is rumored here that the American line vessels are so full of steerage emigrants at the ten dollar rate that there is some talk of sending some of them by their Philadelphia steamers via Liverpool. So far the Cunard Line have given no signs of retracting from the position they have taken up, and there is every prospect of the conflict continuing for some time to come. It is impossible to say what another week may bring forth, but if the rush of emigrants to the Red Star and American line steamers continue as they have done during the last few days it is feared that other British lines will have to take up the German lines challenge in self defense. The situation is a curious one and is being keenly watched and discussed by all parties interested.

At a dinner given lately to Mr. George Drummond, president of the Montreal Board of Trade, and Mr. Arthur Hodgson, ex-president of the Montreal Board of Trade and chairman of the Canadian committee of arrangements, 1903. Sir Alfred Jones, K. C. M. G., president of the Liverpool Chamber of Commerce and head of the Elder Dempster Shipping Co., said he was starting a line of steamers from Canada to the Cape, South Africa, the idea being to bring Canada and the Cape closer together. He was going to place a certain amount of tonnage and a certain amount of space, and was going to take certain passengers free with cargo from Canada to South Africa, so that they could sell Canadian goods and find a permanent market in South Africa. Sir Alfred Jones has since stated that in regard to his offer to carry a certain number of passengers free to South Africa, he does not want to depopulate Canada. Free passages will be offered only to a certain number of agents of Canadian manufacturers, with the object of opening up fresh markets for their produce in South Africa, and they will be allowed to take samples of their goods free with them to the extent of several tons each. At present the Elder Dempster line runs a monthly service between Montreal in the summer and Halifax and St. John, N. B., in the winter, and the Cape, and beginning July 18 next, the steamer Monarch will make the new departure foreshadowed by Sir Alfred Jones. After all the cargo space has been occupied which is allotted to cargo on which freight has been paid, Sir Alfred estimates that there will still remain room sufficient to allow each agent to take several tons of goods free to the Cape. The scheme is intended to be placed in the hands of the Canadian Board of Trade to ensure bona fide manufacturers being represented, and it is believed that the experiment will lead to a greatly increased trade between Canada and the Cape.

The Pacific Steam Navigation Co. have just issued their annual statement of accounts, which show a profit on the working account of $989,865, which is highly satisfactory, having regard to the present depression in the British shipping trade. Dividends amounting to $5 a share have therefore been declared. The company owns a fleet totalling forty-three craft and aggregating 150,832 tons gross, the largest of which is the Orita, 9,231 tons gross.

The contract for the five new ferry boats which are to be built for the Staten Island service has been awarded by the dock commissioners of New York to the Maryland Steel Co., Sparrow's Point, Md. The bid of the Maryland Steel Co. was the lowest in the aggregate, though certain individual bids were lower.

DEVELOPMENT OF THE PACKAGE FREIGHTER.

Buffalo, May 26.—To given even an outline of the development of the package freight carrier on the lakes would be to go deep into the history of the screw propeller, which though invented a trifle more than a century ago, was made to wait, first for steam to turn it and then for the side-wheel steamer to betray its limitations, a side-wheeler being for the most part adapted merely to single-day trips and for carrying a limited amount of freight on deck. So it was well into the '40's when the screw came into use on the lakes and then it was found that trips from lake to lake were to take the place to a great extent of the trips between ports on a single lake.

The railroad was also ready to contend for the short-trip business, especially in carrying passengers, and the side-wheelers, carrying a matter of 600 tons of freight, as the modern ones still do, yielded to the roads for single-day trips and the screw was adopted for the trips of several days. Lately the side-wheelers have returned to the short-trip business on account of the growth of the lake cities, which are able to support both rail and lake passenger traffic. When the grand side-wheelers disappeared from Lake Erie forty years ago it was supposed that they were gone forever, but a teeming population has recalled them, doubtless to stay.

To be brief as to the growth of the package-freight carrier, a steamer equipped with ample hold capacity and with gangways for handling the cargo rapidly, there are, or were last season, ninety-four steamers affiliated in the Association of Lake Lines, and there are nearly as many now, after two lines have practically dropped out, for the addition of one or two new and heavy carriers will make the loss good. The list includes the following fifteen lines: Western Transit, sixteen steamers, 54,500 tons capacity; Anchor Line, sixteen steamers, 43,275 tons; Lehigh Valley, six steamers, 23,200 tons; Union, six steamers, 19,200 tons; Mutual, six steamers, 18,000 tons; Canada-Atlantic, four steamers, 17,700 tons; Rutland Transit, eight steamers, 13,300 tons; Soo, four steamers, 11,300 tons; Union Transit, five steamers, 11,000 tons; Lake Erie, four steamers, 8,100 tons; Lackawanna-Green Bay, three steamers, 7,800 tons; Port Huron & Duluth, two steamers, 3,900 tons; Cleveland & Buffalo, two steamers, 1,800 tons; Detroit & Buffalo, two steamers, 1,200 tons; Detroit & Cleveland, two steamers, 1,200 tons. This tonnage last season gave a total of 223,775 tons, but it differed somewhat from the lines as arranged for this season.

The notable changes are the discontinuation of the Union Transit Line, leaving two steamers to return to their owner, the Union Line; the absorption of the Lackawanna-Green Bay Line by the Soo Line and the taking of one steamer with it, leaving one to go to the Mutual Line and another to the Port Huron & Duluth Line. In the direction of new tonnage the most notable additions are the new Duluth and Utica of 6,000 and 4,500 tons capacity, ready to be added to the Western Transit Line. So it will be seen that the tonnage of the lake package freight lines will be larger this season than ever before and the equipment and adaptability to the business larger accordingly.

While in some cases the faith of the Buffalo line manager, where more of this class of lake craft is managed than at all the other lake ports put together, is not always of the best, a manager said the other day that he had no idea the capacity of the package freight carrier had reached the limit. This depended, he said, on two things, the growth of western business seeking an outlet eastward and the terminal facilities of the lines. If there was dock capacity for a 500-ft. liner he would build one, but as there was not he was confined to a matter of 400 feet. This is equivalent to saying that when the traffic demands docks for longer steamers they will be provided.

Of all the lines mentioned above Buffalo is the lower terminus except in case of sixteen steamers, of 37,100 tons, or about one-seventh of the whole. So the Buffalo outlook may be taken as the chief one as a basis of comparison. What is its future? Of course nobody is going to answer that question. But there are certain changes that are already in operation and of sufficient importance, as well as rapidity of growth, to indicate much in the near future. The Buffalo tonnage and business are growing; will the southern and the Canadian routes and the all-rail lines hereafter grow faster? It is well known that all these competitors, the latter being with lake traffic as a whole and the southwestern routes in the main, are growing faster than the Buffalo route is. The Wolvin line, as it is called unofficially, to Quebec, not included in the above, has managed to get a firm hold on the traffic, largely by reason of special rates, by ocean as well as by lake, and is sure to keep up the race for business. The all-rail routes are now demonstrating their strength by taking the lake-line business at their rates during the strike.

To all the encroachment of the Canadian lines Buffalo says: Let it go on. It will not be alarming before the Erie canal is enlarged and then there must be some counter improvement or the Buffalo route will have its own again. It is a fact that railroad men are saying now that there are developments possible to all-rail that will meet the new Erie canal on an even footing. Still it is quite possible that they are forgetting that all last winter, with no water route to help them, they were in a state of practical blockade, as regards the moving of coarse freights, and they are not today keeping pace with the increase of freight anywhere in the country. This is not the case with the water routes and it need never be, as all that is wanted there is a paying rate of freight.

The faith in the resources of the west is as great as it ever was and there is all the former need of its surplus. Let the Panama-canal route take care of the Pacific coast, the interior west will need the lakes. In confirmation of this idea it should be noted that the lakes are getting more flour from Missouri river points than they used to, and a line manager notes now that there is no prospect of the great flour centers of the northwest and southwest going out of the business. In fact, the southwest is today the great place in the country for selling milling machinery. The future of the package freight traffic by lake is therefore as certain as most lines of business. There will be some changes, but the general volume will increase.

Possibly the steamer itself should be given more attention in this mention of the business, but this is a minor matter. The modern steamer is a development from the wooden liner with the high and cumbrous wooden arches, which is still with us, but which is steadily going out. The Anchor Line still has half a dozen of them and the other older lines also have some. They earn money, but the steel carrier earns more. As the wooden arch became more unwieldy the steel arch took its place, dropping lower and lower till it at last disappeared below the rail. There have been brought in the water bottom, the steel deck and bulwarks, the larger number of gangways, but the art of fast handling of freight, for which the short trip by lake must be in the lead if there is to be profit, came in long ago.

At one time the Buffalo lines increased in number rapidly, especially as one railroad after another sought to use the lakes for through freight connection. Then the period of consolidation set in, till now, as may be noted by the tonnage list, there are but two great lines, the Western Transit and the Anchor Line, each representing a trunk road. Both are survivals of older lines, the former of the Western Transportation and the latter of the Evans line. The Western line was organized in 1854 and was not a railroad line till 1884, when it took its present name. It carried the freight of the Erie railroad till 1870 and is the oldest survivor of a number of individual lines in existence fifty years ago, some of them dating still further back than itself.

MR. WISNER ON GEORGIAN BAY CANAL.

The Royal Commission on Transportation of Canada held a meeting last week at Ottawa to hear Mr. George Y. Wisner, consulting engineer of the Georgian Bay Canal Co., on that project. The commission, consisting of Mr. John Bertram, chairman; Mr. Robert Reford, Montreal, and Mr. E. C. Frye, Quebec, listened attentively to what Mr. Wisner had to say and questioned the engineer on technical points throughout the hearing. Mr. Wisner went into a comparison of the proposed Georgian bay route with the present waterway, via the great lakes and St. Lawrence river. The first question for decision, he said, was what was the economical dimensions of such a waterway. The Erie canal, for instance, had been deemed a great undertaking, but it had been found to be inadequate. Shipbuilders are always pressing for greater depth, and it was necessary to know where the line should be drawn, so that the commission may be satisfied when the work is done that it will be satisfactory, and that something better will not then be demanded.

At the foot of Lake Superior, said Mr. Wisner, there was a depth of 21 ft. Lake St. Clair had an average depth of 21 ft. to 22 ft.; at the head of Lake Erie there was a 22-ft. depth extending 6 miles out into the lake, so that it was evident that if it was undertaken to deepen the canals to 25 ft. the lake channels would also require to be deepened.

In channels where banks are in sight, continued the speaker, there is no difficulty in navigating a 300-ft. channel, but owing to cross currents this was impossible in lakes, where the banks were not in sight. An economical channel of a width of 300 ft. could be constructed where banks were close on either side, but the channels made by the United States in some cases were 1,000 ft. in width. If such a channel could be economically deepened to 21 ft. it would be only useless to build a waterway of a greater depth. Twenty to 21 ft. was the maximum depth of the improved channels of the lake system.

No vessels, in Mr. Wisner's opinion, over 500 ft. in length, were economical carriers; a boat of that length with a 19 ft. draught, would carry 7,500 to 8,000 tons. The engineer explained in answer to a question by Mr. Reford, that a vessel having a 19-ft. draught when at a standstill took when in motion what was termed a squat of one foot deeper, thus having but one foot to spare in a 21-ft. waterway. As to the United States 1,000-ton barge canal, he declared that it would not have the slightest effect on the traffic from the lakes to the seaboard. The canal boats will not prove safe vessels for lake navigation, and it will not pay to construct a waterway which will not carry an economical cargo without transfer from lake to seaboard.

Mr. Reford said that the experience had been that 8,000-ton boats damaged themselves while going through canals, a fact which Mr. Wisner admitted and replied that the canal must be built large enough to obviate this condition.

Coming to the Georgian bay question, Mr. Wisner stated that the total distance from Georgian bay to Montreal by the route is 425 miles, of which 4 miles are taken up with locks, 40 miles of canal section 22 ft. deep with a bottom width of 100 ft., 74 miles of improved river channel, with a bottom width of 300 ft., and 307 miles of open lake and river, suitable for 20-ft. navigation without further improvement. The cost to construct the waterway from Georgian bay to St. Anne's on the St. Lawrence river has been estimated at $69,500,000, and from St. Anne's to Montreal at $10,500,000, making a total of $80,000,000. The cost of the section through Lake St. Louis is based upon the material to be excavated, being largely of rock and will be considerably reduced if much of the excavation is found to be of soft material.

The required length of the canal in the Georgian bay route, in fact, is so small that considerable expense can economically be incurred in making the course large enough for all practical purposes, was the way Mr. Wisner put it. In answer to the chairman, he stated that the locks would be 60 ft. in length, 60 ft. wide and 22 ft. on the outer side. In the upper reaches of the Ottawa, instead of excavating, the canal would be constructed by raising the water surface by a system of dams.

An important point brought out in this connection was the fact that 500,000 H. P. will be developed by this system of dams, above the water rights already taken.

As illustrating the comparative cheapness of cost of construction of the Georgian bay canal, Mr. Wisner compared the estimated figures with those of the Oswego-Mohawk and Ogdensburg-Lake Champlain routes to New York. The cost of the Georgian bay canal on a rock estimate was $85,000,000, for a total distance of 425 miles, with 44 miles of canal. The Oswego-Mohawk route was 477 miles in length, with 102 miles of canals, and its cost would be $200,000,000. The route by way of Ogdensburg, Lake Champlain and the Hudson was the longest of the three, 600 miles, with 100 miles of canal, and the cost of construction would amount to a trifle less than $190,000,000. The Ottawa route was much quicker and in Mr. Wisner's opinion three or four times the volume of the Mohawk route. The distance from Fort William to Ottawa by the new route would be about the same, he said, as that from Fort William to Buffalo by the lake route, in the vicinity of 900 miles.

As to the question of whether the canal would be a paying proposition, Mr. Wisner estimated that with a traffic of 10,000,000 tons there would be no difficulty in making the canal pay. The traffic through the Canadian and American canals at Sault Ste. Marie last season had been 33,000,000 tons. As to the cost of transportation, by water it would amount to about one mill per mile, while by rail it was at least five times that amount.

In this connection Mr. Wisner made the statement that locomotive transportation was the most uneconomical known, from the fact that the cost of coal was continually going up and the locomotive was always traveling under a forced draught.

Chairman Bertram asked Mr. Wisner if, in his opinion, a water route via the French river to Lake Nipissing and thence a down grade railway would pay, to which the engineer replied that it would not, on account of the intermediate transfer.

The cost of maintenance of the canal he placed at $1,250,000 per year, which, with interest, would amount to about $5,550,000.

Asked by Hon. John Haggart the comparative cost of the two routes, considering that the St. Lawrence and St. Lawrence locks would be deepened and the Welland canal enlarged, Mr. Wisner replied that the cost by the Welland canal would be double that of the Georgian bay route. The lake route would also be longer by the distance from Buffalo to Montreal. The rates would be less by the Ottawa, and vessels could go through without breaking bulk, thus saving time of transfer.

The average speed of the North German Lloyd steamer Kaiser Wilhelm II., which arrived in New York this week, for the 3,112 miles from the Sandy Hook lightship to the Eddystone lighthouse was 23.58 knots per hour, as compared with 23.50 knots of the Deutschland of the Hamburg-American line. While the Deutschland's total time over the long distance route was just 53 minutes shorter than the time occupied by the Kaiser Wilhelm II., she actually did not travel so fast, because she ran only 3,082 miles, or 30 miles less than the Kaiser Wilhelm II. The best day's run that the Kaiser Wilhelm II. had was 564 miles.

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The Merchant Marine Commission, which was appointed by congress to inquire into the present condition of the merchant marine of the United States in the foreign trade, will resume its sessions in Chicago on Friday of the present week and will continue in that city throughout Saturday. Sunday and Monday following are to be spent in Detroit, and Tuesday and Wednesday in Cleveland. Earnest efforts are being made in all of these three cities to make these meetings impressive. It is to be understood that the purpose of the commission is to inquire into the causes which have led to the decline of the American merchant marine on the high seas and to provide a remedy therefor. What the commission desires is information, and to that end an endeavor has been made to bring before the commission men who are foremost in many lines of commerce and industry and who are therefore competent to speak within their special provinces. Expert testimony has been secured from the shippers and ship builders of the east; expert testimony will, it is expected, be secured from another point of view from the speakers in the west—that is, from the manufacturers who are anxious to have the avenues of transportation open for their products at all times; from the farmers, who are desirous that the great export trade in breadstuffs may always be able to reach the market abroad; from the bankers, who are anxious to extend their operations by the establishment of branch banks in foreign countries. These men will endeavor to point out to the commission how widespread are the ramifications of the shipping question. It is, indeed, not confined to a single section or a single industry, but concerns the welfare of every American citizen. It is natural that spirited meetings should be held in the great lake cities, because half the tonnage that flies the American flag is on the great lakes, thanks to the beneficent influence of the coastwise laws. Protection has done this for shipping and ship building on the great lakes. It can do the same for shipping and ship building for the foreign trade.

One has a poor view of the subject who considers that the ship builder and ship owner are the only ones directly interested in this question. The ship builder builds the ship in the sense that he puts the various parts together, but he does not make these parts. Thousands of hands have worked upon them long before he saw them. The principal item which enters into the construction of a ship nowadays is steel. A ship plate, which is the shipbuilder's raw material, is some one else's finished product. It was originally ore in the ground. As ore in the ground it paid a profit to the man that shoveled it out; as a commodity to be shipped it paid a profit to the vessel and the railway that carried it to the furnaces; as pig iron it paid a profit to the furnaces that smelted it; and then it paid its final profit to the plant that converted it into steel and rolled it into plate. All along the line it has afforded profitable work to someone. And the same is true of the multitude of other articles which enter into the construction of a ship. A ship is the combined product of a hundred arts and no ship yard can be established without stimulating in some degree a hundred enterprises. Ship building is one of the greatest industries in the world. Collectively it is doubtful whether man has ever done anything greater than the building of a ship.

Why should ship building be permitted to languish in a country whose resources for the building of ships are the most magnificent in the world? Britain is the world's ship builder because she was aided in becoming so by a generous and far-seeing government. One has to dip but slightly into commercial history to discover that the time has not long since passed when the United States was the ship building nation of the world. She possessed more ships, and, what is more to the point in this article, she possessed more steamers than Britain. But Britain recognized how much greater is the potential tonnage of a steamer than the sailing ship, and she began definitely to help the building of steamers by granting enormous sums for carrying the mail to outlying countries. These sums were so great that they were greater than the original cost of the ships themselves. But they served their purpose. If government aid has given Britain the advantage why cannot it do likewise for the United States?

"THE MAN AT THE WHEEL."

Exit.

The Masters & Pilots' association on the great lakes.

And everybody breathes easier.

It is quite in order to refer to this subject again, as the commerce of the lake region is a fundamental part of this country's prosperity.

It is not within the power of man to adequately appreciate the extent to which the wealth and growth of America has resulted from or become dependent upon the ore mined in the far-away upper lake region and transported upon the great lake highways to the blast furnaces at the lower terminals of navigation.

No use referring to the millions and millions of tons of ore so consumed or its far-reaching influence upon the trade and commerce of the entire earth after it has been made into rails, plates, shapes, sheets and the myriads of forms into which the iron and steel products of America are converted by our furnaces, mills and foundries.

No use here dwelling upon the fact that our iron and steel products go to every nation and circle the earth and are to be found in every clime.

Useless to discuss the extent to which they have become a necessary of life and a necessity upon which thousands and millions of human beings in America and Europe are more or less dependent.

Unnecessary to explain that our own entire manufacturing system in a very few weeks would have been simply paralyzed if the strike could have been continued, and a national prostration of all business would have resulted to an extent that no human imagination probably could adequately appreciate.

Just think of it.

Think of how near we were to a calamity the effect of which would have been so inconceivably monstrous.

Think, if you can, of the entire country having been held up and the traffic of the universe touched by a little organization of a few hundred members, not 25 per cent of whom were in full accord with the radical spirits who dominated it.

A few years ago a man would have been regarded as crazy had he predicted such an event.

People would have said it was a sort of Jules Verne story.

And yet the condition is here, here right now, and while there were many factors that had to do with the failure of the "conspiracy" (for that is the right word), the chief one was the business depression and the action of the far sighted managers who brought down a generous supply of ore last season.

Can anyone tell where we would have been or whither drifting if the business situation this season had been a repetition of some of the previous years?

The chances are that a situation would have been developed that would certainly have been more difficult to control and would have required, eventually, the most drastic measures, alike severe upon both employers and employes, possibly involving in some small measure many who were not included in the events that have just passed into history.

By virtue of the strength of their association, supported by their government licenses, the Master & Pilots occupied a position very nearly invulnerable had their cause been sufficiently just to keep them together.

But it lacked that greatest of all elements, and while they had some just reasons for complaint, they nearly all instinctively felt that they were in the wrong in the extreme measures adopted, and that those radical spirits who had, as they always do, assumed control of the situation, would only succeed in making the end, whenever it came, worse than the beginning.

And it so proved.

And the present situation will eventually terminate better to themselves than if they had won a temporary victory and thus made their final and inevitable defeat still more harsh and disastrous.

It is not contended that mistakes of a somewhat serious character have not been made by the employers which had much to do with the unfortunate situation as it subsequently developed, but when a direct offer to adjust these satisfactorily had been made, a settlement should have been quickly arranged.

This is no season to establish a precedent of a radical raise in the wage rate.

Especially after a number of other organizations had accepted the same or less than last year.

This would have added another burden or fixed charge to the cost of lake ore that would have stimulated other bodies of employes to do likewise.

And make competition with southern iron and steel, produced always under more favorable labor conditions, more difficult.

And as we said in our last issue, leading back to the primary forces behind the united effort made by the Masters & Pilots' association were the United States navigation laws limiting the number of possible applicants for vacant positions, making it necessary for them to be American citizens and have government licenses. There is a section of these statutes which reads as follows:

"Section 4449—If any licensed officer shall, to the hindrance of commerce, wrongfully or unreasonably refuse to serve in his official capacity on any steamer, as authorized by the terms of his certificate of license, or shall fail to deliver to the applicants for such service, at the time of such refusal, if the same shall be demanded, a statement in writing, assigning good and sufficient reasons therefor, his license shall be revoked upon the same proceedings as are provided in other cases on revocation of such licenses."

Now it is not possible to compel a licensed officer to work if he does not wish to, and while this statute may appear on the surface to cover the situation very fully, it would seem never to have yet been effectually applied, and it only needs one more issue like that which the country just passed through to compel immediate legislation with a view of making more effective the present restrictions to enable the proper authorities to revoke any license where it could be shown that the holder is a party to a concerted effort which has for its purpose the interfering with the commerce of the country.

The intent of the statute is clear enough, but the provisions for putting it into operation, as so often happens, are not sufficiently adequate.

It is no more possible to compel a licensed officer to work than it is to compel a licensed physician to practice, but the refusal of the latter would not work a hardship because others in plenty could be immediately found, but were all the physicians in the country to refuse to assist the sick or injured there would be ample justification for the use of the word "conspiracy" or something worse, as there is in this case.

But it is all over for the present, and let us hope forever.

And this entire country owes a debt of gratitude to those few members of the Lake Carriers' association who were instrumental in holding their associates in line for a definite policy.

No few men have ever been charged with a greater business responsibility or were confronted by a labor difficulty where the duty to be performed would have been more far-reaching than this one in the end.

And they were equal to the emergency.

We wish it were policy or possible to particularize and specify, but it is neither. And it is greatly to be regretted that the business interests of America cannot be made to realize that they were on the brink of a precipice from which they were only saved by the determined well-balanced judgment of those who found themselves in charge of the situation when the critical moment arrived.

In its own humble way the Marine Review extends its most sincere congratulations.

APPOINTMENTS OF MASTERS AND ENGINEERS.

Pittsburg Steamship Co. H. A. Coulby, President and General Manager, Cleveland, O.

	Captain.	Engineer.
Str. Bartlett	S. J. Millen	E. R. Leedham
" Bessemer	W. S. Hoag	A. G. Haig
" Black	S. C. Allen	John Hegemer
" Briton	Geo. Holdridge	John Skelly
" Bunsen	A. C. Chapman	J. F. Wood
" Cambria	John Gemmel	J. H. Riggin
" Colby	A. G. McLeod	W. J. Baird
" Colgate	C. H. Noble	J. C. Talbot
" Coralia	J. W. Morgan	Alex McKenzie
" Cornell	W. H. Kilby	A. L. Eggert
" Corona	A. C. Smith	W. G. Tilton
" Corsica	D. M. Fisher	J. J. Norcross
" Cort	J. R. Noble	C. B. Culver
" Crescent City	Frank Rice	Irwin Marshall
" Eads	Arthur Montague	W. J. Harsant
" Edenborn	Richard Jollie	E. S. Stoddard
" Ellwood	C. H. Cummings	G. C. Lawrence
" Empire City	A. R. Robinson	Frank Mansfield
" Ericsson	John Nahrstedt	A. P. Williams
" Fairbairn	Chas. Grant	D. Fraser
" Fulton	Clint Ennis	Geo. Arnold
" Gates	J. A. Walsh	J. W. Greiner
" German	C. A. Weitzman	J. B. Miller
" Gilbert	E. O. Whitney	A. McGillivray
" Grecian	A. Hansen	M. B. Sturtevant
" Griffin	J. C. Bell	O. H. Gillmore
" Harvard	M. A. Boyce	C. H. Burke
" Hill	Geo. Bell	Frank Schwartz
" Houghton	E. M. Smith	J. W. McEachron
" Hoyt	W. E. Stover	Peter A. Rivers
" Joliet	Thos. Wilson	George Lynn
" Lafayette	W. H. Moody	Levi Walder
" La Salle	A. R. Thompson	J. L. Walker
" Linn	Fred Hoffman	Herman Dupont
" Manola	Lewis Elliott	Aubrey Rivard
" Mariska	H. Kerr	Silas H. Hunter
" Maruba	S. C. Watson	H. E. Schmidt
" Matoa	H. Gegoux	E. J. Rae
" Marina	Geo. Banker	J. T. McLeod
" Masaba	R. H. Brooks	J. H. McGlenn
" Maritana	J. R. Parker	C. A. Fletcher
" Mariposa	Jas. Burr	E. H. Learned
" Maricopa	J. LaFramboise	F. A. Smith
" Mataafa	R. F. Humble	Wm. Most
" Maunaloa	Neil Campbell	Frank Harringer
" Malietoa	F. A. Bailey	Thos. Treleaven
" Mather	C. H. Boyce	A. J. Armson
" McDougall	C. D. Secord	Fred Warning
" Morse	John Lowe	E. W. Fox
" Murphy	John Burns	Henry Annett
" Neilson	Oscar Oleson	A. P. Williams
" Poe	W. C. Iler	W. L. Campbell
" Palmer	J. H. Clapp	J. H. Cunningham
" Princeton	F. W. Stenton	M. Toner
" Queen City	W. J. Hunt	F. G. Carey
" Rensselaer	A. J. Talbot	John Dupont
" Rockefeller	P. A. Peterson	Thos. Kelley
" Roman	Geo. Randolph	Wm. Dornbrook
" Saxon	E. Dyble	Richard Mastin
" Shaw	A. P. Chambers	E. J. Fitzgerald
" Siemens	M. K. Chamberlin	Duncan McVicar
" Stephenson	W. B. McGregor	S. W. Armstrong
" Superior	———	Geo. Ingham
" Superior City	Jas. Leisk	Wm. Densmore
" Thompson	T. J. Cullen	F. E. Sanders
" Trevor	Matt Langell	Thos. McKenzie
Str. Van Hise	E. P. Wright	John McLaughlin
" Watt	H. Culp	A. W. Armson
" Wawatam	E. L. Sawyer	J. B. McDermid
" Wolvin	Geo. Bowen	Wm. Clucas
" Zenith City	C. Gegenheimer	A. Jackson

	Captain.
Schr. Bell	Willard Damon
" Bryn Mawr	G. Kendall
" Carrington	W. F. Allen
" Corliss	J. Y. Sprowell
" Fritz	W. H. Dick
" Holley	D. Graham
" Jenney	A. Nordahl
" Krupp	Fred Rae
" Malta	D. Bouille
" Marcia	Geo. Maloney
" Manda	H. Harris, Jr.
" Martha	H. White
" Magna	David William
" Maida	O. W. Holdridge
" Maia	J. A. Ferguson
" Manila	H. Walper
" Maderia	J. H. Dissette
" Marsala	L. Leonard
" Nasmyth	C. Gordon
" Roebling	H. M. Saveland
" Russell	R. Thompson
" Smeaton	J. F. Gray
" Thomas	C. Mulholland
" Whitworth	C. Thompson
" 105	D. McFayden
" 107	C. E. Chilson
" 109	W. Bowen
" 110	P. Gustafson
" 111	W. H. Hoffman
" 116	Ed. Morey
" 117	W. McDonald
" 118	G. Foster
" 126	A. Siljander
" 127	C. Buck
" 130	T. P. Thompson
" 131	A. Baupre
" 132	H. P. Foote
" 133	E. Emanuelson
" 134	A. H. Hand
" 137	H. T. Kelley
" 201	Fred Kirk
" 202	F. P. Cummings

The Gilchrist Transportation Co. J. C. Gilchrist, President, Cleveland, O.

	Captain.	Engineer.
Str. Case	Wm. Humphrey	W. H. Pinkham
" City of Genoa	Alex Clark	Wm. Brake
" City of Naples	W. H. Landgraph	Peter Mullen
" City of Rome	Benson Fox	Peter Britz
" Colonial	Nelson Brown	J. W. Douglas
" Cumberland	J. B. Lyons	Daniel Flint
" C. A. Eddy	F. A. Dupuy	Stewart Brant
" C. W. Elphicke	J. W. Baby	David L. Brown
" Gilchrist	Geo. Cudeback	W. T. Schwacofer
" Jos. C. Gilchrist	Ben. Mozier	John Parks
" Frank W. Gilchrist	Chas. Hahn	Henry Jesson
" C. C. Hand	Fred Hessenflue	R. O. Butler
" Harper, John	A. M. Williams	A. L. Millet
" F. W. Hart	Chas. Hinslea	John Fritz
" Helena	Stanton Markle	Peter Shackett
" Hiawatha	John Connelly	Wm. O. Butler
" R. L. Ireland	J. P. Minskey	C. N. Albee
" Jupiter	W. G. Rogers	C. J. Erickson

		Captain.	Engineer.
Str.	Lake Shore	A. M. Shepard	Geo. Zangler
"	Lansing	Ellis	Peter Robertson
"	Mars	R. J. Walder	H. J. Hawthorne
"	Massachusetts	———	Bert Crane
"	Thos. Maythan	Duncan Buie	A. MacLaren
"	Mecosta	T. J. Carney	John Connelly
"	Merida	Ed. Mooney	Jas. Balfour
"	Merrimac	Frank Bertrand	Frank Ouellette
"	Neosho	Chas. Caughell	Bernard Woods
"	Neptune	Alex. Clark	Thos. Burns
"	Neshoto	Truman Moore	Gustave Rogers
"	Alex Nimick	Pierce Bouille	D. M. Foster
"	E. W. Oglebay	C. H. Heaton	A. L. Hatch
"	Olympia	S. E. Philp	Peter La Mar
"	F. M. Osborne	M. H. Clark	R. H. Reynolds
"	R. R. Rhodes	Albert Swanson	D. Connelly
"	Saturn	Geo. White	E. Harris
"	E. N. Saunders	E. L. Ennes	H. L. Mitchell
"	R. E. Schuck	F. A. Goodell	John Seymour
"	Siberia	B. F. Ogden	H. W. Barden
"	Henry S. Sill	J. C. Byers	Clem Clark
"	Sitka	F. E. Johnson	E. J. Law
"	Steel King	A. C. May	Burt Beauchamp
"	Tacoma	———	T. J. Fowler
"	C. Tower	Frank Ott	Otto Elsholz
"	Uranus	Peter Full	A. F. Hogle
"	Vega	W. F. Delaney	T. Harringer
"	Venus	Frank Powell	Chas. Gumlick
"	Vermillion	———	T. F. Higgins
"	Volunteer	H. F. Loftus	Luke J. Mannion
"	Vulcan	W. G. Slackford	T. F. Birch
"	Perry G. Walker	S. F. Gunderson	Jos. Barney
"	Wallula	M. J. Madden	C. T. Martin
"	C. W. Watson	C. M. Ennes	R. D. Maybury
"	J. L. Weeks	W. G. Stewart	Th. A. Francombe
"	D. C. Whitney	D. B. Elsey	Wm. Beamer
"	D. M. Whitney	W. C. Butts	Ch. A. Francombe
"	Geo. F. Williams	H. Bennett	Chas. Burns
"	Lewis Woodruff	Thos. Gibson	John Maher
"	A. P. Wright	Geo. Phillips	Phillip C. Mayer
"	Yakima	J. S. Jones	Frank Hefferman
Bge.	Antrim	Ed Lohr	Wm. Marshall
"	Tyrone	Geo. Richards	Geo. Riggin
Schr.	M. S. Bacon	Henry Elbe	
"	W. S. Crosthwaite	F. A. Patterson	
"	F. A. Georger	Wm. Ziem	
"	Magnetic	S. Minskey	
"	B. W. Parker	Mathew Ross	
"	Twin Sisters	A. A. Monroe	
"	Verona	———	
"	Yukon	Louis Bangs	

H. E. Runnels, Port Huron, Mich.: Steamers—Maggie Duncan, Capt. James Cassin, Engineer, Gill McClellan; O. O. Carpenter, Capt. Guy Geel, Engineer, Jos. Cadott. Barges—Favorite, Capt. L. Sinclair, E. E. Tyson, Capt. Chas. W. Annis.

John Stevenson, Detroit: Steamers—Miami, Capt. H. Huyser, Engineer, John Elsey; W. P. Thew, Capt. J. W. Jock, Engineer, A. Peltier; Hattie, Capt. Geo. King, Engineer, W. Bushey; Schooner A. Gebhart, Capt. E. Biddlecomb.

Anchor Line, J. C. Evans, Western Manager, Buffalo, N. Y.: Steamers—Tionesta, Capt. Edward Martin, Engineer, John Wise; India, Capt. E. E. Loadwick, Engineer; John Forrestel; China, Capt. J. J. Lehan, Engineer, A. B. Birdsall; Japan, Capt. John Doherty, Engineer, Wm. Wilson; Muncy, Capt. Chas. Nelson, Engineer, Fred Rehbaum; Codorus, Capt. L. Wright, Engineer, Timothy Griffin; Mahoning, Capt. H. O. Miller, Engineer, A. Black; Schuylkill, Capt. A. McKenzie, Engineer, John Jordan; Susquehanna, Capt. H. Cronkhite, Engineer, Albert Edgar; Alaska, Capt. Jos. Corcoran, Engineer, John Healey; Lehigh, Capt. F. Bloom, Engineer, Wm. Garrity; Clarion, Capt. Geo. J. Delany, Engineer, Albert Welch; Lycoming, Capt. M. Boggan, Engineer, Edw. Stevenson; Conemaugh, Capt. Chas. Christy, Engineer, Chas. Hull.

Capt. J. B. Hall, Buffalo: Steamer New Orleans, Capt. J. H. Coleman, Engineer, P. F. Conniff.

Myles Transportation Co., Ltd.: Niagara Falls, N. Y.: Steamer Myles, Capt. J. S. Moore, Engineer, Peter Ryan.

John Corrigan, Cleveland: Steamer Aurania, Capt. A. Gains, Engineer, John J. Maxwell.

Sandusky Lumber & Box Co., Sandusky, O.: Steamer Linden, Capt. J. H. Warwick, Engineer, R. Campbell; Schooner Charles Wall, Capt. Dan Nathan.

J. Emery Owen Trans. Co., R. T. Gray, Manager: Detroit, Mich.: Steamer John Owen, Capt. H. T. Archer, Engineer, S. L. Phillips.

St. Lawrence & Chicago Steam Nav. Co. (J. H. Haggerty, Manager), Toronto: Steamers—W. D. Matthews, Capt. James Ewart, Engineer Edmund J. O'Dell; Iroquois, Capt. James McMaugh, Engineer, Wm. Harwood; Algonquin, Capt. Wm. H. Wright, Engineer, John W. Taylor; Rosedale, Capt. P. J. Shaw, Engineer, James Findlay.

Tonawanda Iron & Steel Co., N. Tonawanda, N. Y.: Steamers—John F. Eddy, Capt. Thos. Deringer, Engineer, F. Trinkwalder; Fleetwood, Capt. W. S. Carlos, Engineer, Harvey Depuy; Veronica, Capt. W. R. Dunn, Engineer, R. Shinskey; Clyde, Capt. John R. Hesson, Engineer, J. P. Merrill; Mercur, Capt. Francis A. Gould, Engineer, J. E. Westrick; Packer, Capt. Geo. W. Honner, Engineer, M. Maher; Oceanica, Capt. T. L. Van Dusen, Engineer, Jas. R. Hurd; C. F. Curtis, Capt. J. T. Kenny, Engineer, H. D. Fifield; Spencer, Capt. Frank Conlin, Engineer, W. J. Cunningham. Schooners—Pennington, Capt. Chas. C. Hanley; Moravia, Capt. Peter Keischgens; Amboy, Capt. Jos. A. Thodey; Fassett, Capt. Jno. Bourklund; Holland, Capt. J. H. Christie.

Argo Steamship Co (E. L. Fisher, Manager), Cleveland: Steamer Argo, Capt. Geo. L. Cottrell, Engineer, John Ferguson. Schooners—Dobbins, Capt. H. May; Jones, Capt. John Nelson.

J. H. Sheadle, Manager, Cleveland Cliffs Iron Co., Cleveland: Steamers—Pontiac, Capt. H. H. Parsons, Engineer, Thos. Durkin; Frontenac, Capt. T. E. Murray, Engineer, J. B. Hart; Andaste, Capt. C. E. Sayre, Engineer, C. H Menmuir; Choctaw, Capt Wm. Langell, Engineer, T. J. Rees; Cadillac, Capt. Chas. A. Anderson, Engineer, J. F. Kalb; Pioneer, Capt. C. R. Ney, Engineer, Wm. Neylon; Falcon, Capt. J. C. Dobson, Engineer, R. W. Fink, Barge Chattanooga, Capt. Thomas Kimmitt.

Hopkins Steamship Co.: Steamer Centurion, Capt. S. A. Lyons, Engineer, T. B. Kelley.

Presque Isle Trans. Co.: Steamers—Angeline, Capt. S. N. Murphy, Engineer, E. V. Barry; Presque Isle, Capt. J. M. Johnston, Engineer, Thos. Balin.

St. Clair Steamship Co.: Steamer Kaliyuga, Capt. Fred L. Tonkin, Engineer, L. Wally.

Thos. Adams, Detroit: Managing Owner Steamer Langham, Capt. W. M. Mahon, Engineer, James Kelly; Manager, Adams Trans. Co.: Steamer Thomas Adams, Capt. F. B. Cody, Engineer, T. J. McCabe; Manager, Monroe Trans. Co.: Steamer Geo. L. Craig, Capt. D. J. Duncanson, Engineer, S. C. Staley.

Western Transit Co, Buffalo, N. Y.: Steamers—Auburn, Capt. H. Holmberg, Engineer, Harry Morgan; Boston, Capt. H. Murphy, Engineer, Patrick Welsh; Buffalo, Capt. S. R. Jones, Engineer, Jas. Sangers; Chicago, Capt. John Fisher, Engineer, John Raney; Commodore, Capt. M. Folan; Engineer, John Metke; Duluth, Capt. Donald Gillies, Engineer, Frank Miller; Mohawk, Capt. F. D. Osborne, Engineer, Chas.

Murray; Milwaukee, Capt. Thos. Slattery, Engineer, John Marks; Syracuse, Capt. John Kennedy, Engineer, D. Donohue; Troy, Capt. Robt. Murray, Engineer, Fred. Hale; Utica, Capt. John Davis, Engineer, Robert Hess. Steamers Arabia, Montana, Rome, Vanderbilt and Yonkers, appointments not yet made.

F. W. Gilchrist, Alpena, Mich.: Steamers—Viking, Capt. Harry Richardson, Engineer, Ledford Richards; S. C. Hall, Capt. John Place, Engineer, Wm. Hamilton. Barges—Vinland, Capt. Thos. Stephens; Sam. Flint, Capt. Alex. McLean; Nellie Mason, Capt. J. B. Mitchell.

David Vance & Co., Managers, Milwaukee, Wis., Inter-Ocean Navigation Co.: Steamers—Maryland, Capt. J. E. Yax, Engineer, M. Conley; Manchester, Capt. Tim Kelley, Engineer, Jas. Grant.

Milwaukee Steamship Co.: Steamers—F. L. Vance, Capt. David L. Vail, Engineer, Emil Jahns; R. P. Flower, Capt. John J. Doyle, Engineer, Daniel Darcy. Wisconsin Steamship Co., Steamer F. Schlesinger, Capt. F. W. Van Patten, Engineer, Richard Piepkorn.

Ashley & Dustin, Detroit, Mich.: Steamer Wyandotte, Capt. Hugh Phillips, Engineer, W. J. Southwell.

W. Livingstone, Detroit: Steamers—T. W. Palmer, Capt. George F. Stilphen, Engineer, George Purvis; Livingstone, Capt. James Doner, Engineer, James Morrison.

M. J. Cummings, Oswego, N. Y.: Steamers—Western Star, Capt. P. J. Griffin, Engineer, Martin Griffin; C. S. Parnell, Capt. Wm. Griffin, Engineer, S. Mallon.

H. J. Pauly, Milwaukee, Wis.: Schooners—Aberdeen, Capt. Thos. Leisk; Baltic, Capt. A. Peters. Steamers—Thos. Davidson, Capt. H. Oerking, Engineer, Thos. Martin; John Duncan, Capt. ————, Engineer, B. Aldrich; Walter Vail, Capt. ————, Engineer, J. Charmack.

Michigan Central R. R. Co., Detroit, Mich.: Steamers—Transfer, Capts. J. C. Craig, H. L. Innes, Engineer, A. O. Barton; Transport, Capts. Wm. King, A. J. Huntoon, Engineer, John Cockburn; Michigan Central, Capts. Wm. Corr, A. Curtis, Engineer, Alex. Pirie.

Canadian Pacific Ry. Co., Owen Sound, Ont.: Steamers—Manitoba, Capt. E. B. Anderson, Engineer, Wm. Lewis; Alberta, Capt. Louis Pyette, Engineer, A. Cameron; Athabasca, Capt. McDougall, Engineer, Wm. Lockerbie.

Edward Mehl, Erie, Pa.: Steamer Uganda, Capt. W. W. Wilkins, Engineer, Wm. N. Phillipie.

Indiana Trans. Co., Michigan City, Ind.: Steamers—Indianapolis, Capt. Donald McLean, Engineer, Chas. Warwick; Mary, Capt. A. Alexander, Engineer, C. LaBounty.

Eddy-Shaw Transit Co., Bay City, Mich.: Steamers—E. C. Pope, Capt. L. H. Horrell, Engineer, Wm. C. Anderson; Selwyn Eddy, Capt. T. G. Tulian, Engineer, John F. Quinn; Penobscot, Capt. Wm. A. William, Engineer, Edw. A. Hoffman; City of Bangor, Capt. A. J. Mahon, Engineer, John M. Conroy.

Great Lakes & St. Lawrence Trans. Co., A. B. Wolvin, President, Duluth, Minn.: Steamers—Robert Wallace, Capt. D. A. Kiah, Engineer, Geo. E. Willard; H. G. Dalton, Capt. J. Linthup, Engineer, C. L. Birtrand; John Sharples, Capt. H. D. Hait, Engineer, L. W. Griggs; J. F. Keefe, Capt. K. A. Jensen, Engineer, James Chestnut; Geo. C. Howe, Capt. John Dunn, Engineer, J. F. Norton; John Crevar, Capt. Alex. Craigie, Engineer, John Bustead; S. N. Parent, Capt. J. Goodrich, Engineer, Wm. Drysdale; A. D. Davidson, Capt. Wm. Chamberlain, Engineer, W. N. Newcomb; John Lambert, Capt. K. W. Gleason, Engineer, W. T. Riley; A. N. Marshall, Capt. John Duncanson, Engineer, Geo. McMonagle.

F. M. Osborne, Cleveland: Steamers—John W. Moore, Capt. Emil Detlefs, Engineer, A. G. Bohland; Louisiana, Capt. A. J. Ellery, Engineer, A. Edmondson.

Lehigh Valley Trans. Co., Buffalo, N. Y.: Steamers—Seneca, Capt. James H. Green, Engineer John Halldins; Tuscarora, Capt. Wm. Williams, Engineer, John Lahey; Bethlehem, Capt. C. E. Fuller, Engineer, Henry King; Saranac, Capt. C. S. Fury, Engineer, H. Wilson. Steamers Mauch Chunk, Wilkes Barre and E. P. Wilber, appointments not yet made.

FREIGHT SITUATION.

The freight situation is not such as to delight vessel owners and two conferences have been held in Cleveland during the week by the leading vesselmen to take action upon the subject. The ending of the Masters & Pilots' strike threw a great deal of tonnage upon the market at once and found the shipping docks unprepared to receive it. This state of affairs contributed to the establishment of a wild rate of ore of 70 cents from the head of the lakes and 55 cents from Escanaba, but none of the leading vesselmen recognized it. As a result of the peculiar state of the industry ships have been going up loaded and coming down light which is the reverse of the normal condition. While some season contracts have been entered into the season contract rate has not yet been established. The leading vesselmen are endeavoring to obtain a contract rate of 80 cents from the head of the lakes, which would be 5 cents less than last year, and there is also a disposition to make the differential from Marquette 5 cents instead of 10 cents.

Coal rates have been established upon a basis of 35 cents from the head of the lakes and 45 cents from Lake Michigan, which is 5 cents lower than the contract rate last year. The wild rate on coal still continues to be 40 cents at the head of the lakes and 50 cents to Milwaukee. A great deal of coal is going forward.

Weakness, indeed, marks the situation all around. The low water mark in the transportation of grain was reached this week in the charter of the steamer Sonora from South Chicago to Buffalo at ¾ cents for corn.

It is expected, however, that the situation will materially improve after July 1 when some freedom of movement is anticipated in the ore trade.

CHICAGO GRAIN REPORT.

Chicago, June 21.—The willingness of managing interests to enter their vessels in the general trading under a reasonably encouraging operating status, develops an excess of vessels at the various upper loading ports and against which an unusually dull shipping demand. Within the past few days engagements of Chicago-Buffalo corn were consummated at basis 7/8c per bushel; the all-water routing to Montreal 3¾c corn; with Midland and Port Huron shipping very dull on the Buffalo rate basis. Grain stocks and crop prospects lean favorably to at least a reasonable movement, but the more general apportionment of vessels is necessary to benefit in the immediate rate position.

Following is a comparative statement of elevator stocks and shipments to the present period:

STOCKS OF GRAIN IN PUBLIC AND PRIVATE ELEVATORS.

	This week	Last week.	Last year.
Wheat	2,915,000	3,063,000	4,968,000
Corn	6,440,000	6,340,000	4,424,000
Oats	1,325,000	1,408,000	1,583,000
Rye	453,000	453,000	230,000
	11,133,000	11,264,000	11,205,000

LAKE AND RAIL SHIPMENTS.

	Since Jan. 1, 1904	Same time year ago.
Wheat	6,324,788	9,731,362
Corn	26,842,145	35,556,845
Oats	22,410,534	31,263,418
Rye	763,382	1,999,747
Barley	2,570,263	1,452,231
	58,911,112	80,003,603

LAKE CARGO RECORDS.

Of course, since the advent of the giant steamer Augustus B. Wolvin on the great lakes all cargo records are going by the board. The Wolvin took on her maiden trip 9,904 tons, 1,800 lbs. of soft coal from Lorain to the head of the lakes, which of course is the cargo record for coal. The steamer J. H. Reed of the Providence Steamship line, also a Wolvin boat, took 8,029 tons 1,400 lbs. of coal from Toledo to the head of the lakes, which is the next best record for coal. The Wolvin has just received her maiden cargo of iron ore from Two Harbors, being 9,727 gross tons or 10,892 net tons of ore. The nearest approach to this record was that of the steamer Wm. Edenborn, owned by the Pittsburg Steamship Co., which took 8,807 gross tons or 9,864 net tons from Escanaba to South Chicago. This comparison, however, is not quite fair, as on this short trip the Edenborn was favored with a deeper draught than obtains on the usual course. She drew 20 ft. 10 in. aft with this cargo. The Wolvin with her great load drew 18 ft. 3 in. forward and 18 ft. 6 in. aft and her cargo is destined for Lake Erie. Doubtless before the season is over the Wolvin will have established new cargo records in all of the trades. Following are the cargo records corrected to date:

Iron Ore—Steamer Augustus B. Wolvin, owned by Acme Steamship Co., A. B. Wolvin, Duluth, manager, 9,727 gross tons or 10,892 net tons, Two Harbors to Lake Erie. Steamer Wm. Edenborn, owner by Pittsburg Steamship Co., A. B Wolvin of Duluth, manager, 8,807 gross tons or 9,864 net tons, Escanaba to South Chicago.

Grain—Steamer J. H. Reed, Provident Steamship Co., A. B. Wolvin of Duluth, manager, 271,000 bu. of wheat, equal to 8,130 tons (2,000 lbs.), Duluth to Buffalo; steamer D. M. Clemson, Provident Steamship Co., A. B. Wolvin of Duluth, manager, 336,365 bu. of barley, equal to 8,073 tons, Duluth to Buffalo; steamer Rensselaer, Pittsburg Steamship Co., A. B. Wolvin of Duluth, manager, 151,000 bu. of wheat, 94,000 bu. of barley and 55,155 bu. of oats (300,155 bu. in all), equal to 7,668 tons, Chicago to Buffalo; steamer Mataafa, Pittsburg Steamship Co., A. B. Wolvin of Duluth, manager, 185,399 bu. of corn, 40,000 bu. of rye and 43,600 bu. of wheat (268,000 bu. in all), equal to 7,619 tons, Chicago to Buffalo.

Coal—Steamer I. L. Elwood, owned by Pittsburg Steamship Co., A. B. Wolvin of Duluth, manager, 7,688 net tons anthracite, Buffalo to Duluth; steamer Augustus B. Wolvin, owned by Acme Steamship Co., A. B. Wolvin, Duluth, manager, 9,904 tons, 1,800 lbs. of bituminous, Lorain to Duluth; steamer James H. Reed, owned by Provident Steamship Co., A. B. Wolvin, Duluth, manager, 8,029 tons, 1,400 lbs. of soft coal, Toledo to Duluth.

LAKE SUPERIOR IRON MINING.

Duluth, Minn., June 22.—Aside from the work of the Canisteo Mining Co. on the western Mesabi and some twenty-five drills scattered along the range, there is little doing in the way of exploration for new ore bodies in any one of the five Lake Superior ranges. On the Vermillion, however, three drills are busy at section 30. The work that was started a year ago at Baraboo, Wis., is languishing, and the general current of opinion is that no large deposits of high grade ore will be found there, that about 50 per cent is about as good as can be figured for quantity, but that much of that grade may be expected. There will be difficulties in mining, however, chiefly on account of the immense volume of water that will be encountered beneath the porous sandstone of the overlying strata, and it is a question whether these Baraboo fields present any advantages over the leaner ores of the Menominee range, which are present in immense quantity and can be freighted to Chicago at a rate at least as low as those of Baraboo, though the latter are far nearer by miles. The Menominee has the advantage of part water haul and a deep draught for ships. Some work is under way north of the international line on Hunter's island, but it is confined to small compass and is indeterminate. One company remains at work in Aitkin county, Minn., and is now sinking a shaft to test what is supposed to be an ore formation. These are about all the explorations under way in the northwestern iron regions.

The Kinney mine, the largest property of the Republic Iron & Steel Co., was opened a few weeks ago for the season. Now it has been closed down indefinitely, though the manager states that he hopes to resume later in the year. This leaves no mines of this company operating aside from its Virginia group of underground properties on the Mesabi, and its Cambria and Lillie at Negaunee.

Shaft "A" at Lincoln, of the Interstate Iron Co., Virginia, Minn., is closed on account of damage to the machinery. It will resume this week. This mine should produce about 350,000 tons this year and will be the most active mine in the group at that place. Steam shovel has been put into the stockpile and ore is going forward rapidly.

Practically all the mines of the United States Steel Corporation that will be large shippers for the season have commenced work, and are sending ore to docks in considerable quantity. On the Mesabi range the Corporation's Burt, Sellers, Glen, Pillsbury, Clark, Chisholm, Mountain, Adams, Fayal, Spruce, Genoa, and some others are busy; on the Vermillion every mine but Soudan is shipping; on the Gogebic its Norrie, Aurora, Pabst and Tilden are sending ore down, though Tilden is shipping but slowly; on the Marquette its Lake Superior and Regent group are active, and on the Menominee its Chapin, Aragon, Iron River group and some smaller are at work. None of these mines are yet shipping in the rate they will work later, for there are not enough ships coming to docks to make them very busy. The probability is that shipments in the course of a week or two will be as lively as during the most of last year.

Generally speaking outside mines are not as lively as those of the Steel Corporation, but they are getting into line quite fast now. Several that closed a week or two ago on account of a lack of coal, or for some other cause, are resuming.

Lake Angeline mine of Jones & Laughlins, at Ishpeming, will probably never again be as large a shipper as it has been. It is the policy of the company from now on to reduce the output and conserve the remaining reserves. So the force has been reduced and will not be increased this year.

SHIP YARD NOTES.

G. K. Phillips & Co. of Bethel, Del., are building a three-masted schooner of 700 tons capacity.

N. B. McDonald & Sons have contracted to build another five-masted schooner for N. S. Gilberts of Bath, Me.

The Fulton Iron Works, San Francisco, launched the tugboat Arab for the Pacific Mail Steamship Co. on May 28. She is an oil-burner, 115 ft. long, 24 ft. beam and 12 ft. in depth of hold.

The Pusey & Jones Co., Wilmington, Del., are building a side-wheel passenger, mail and freight steamer, 100 ft. long, 20 ft. beam and 6 ft. depth of hold. On completion it will be sent to Georgetown, S. C.

The Bendixen Ship Building Co. of Eureka, Cal., has received a contract from McCormick, Hauptman & Co. of San Francisco, to build a steamer 165 ft. long, 36 ft. beam and have a depth of hold of 12½ ft.

The new speed launch now under construction at the yard of the Merrill-Stevens Engineering Co., Jacksonville, Fla., for the president of the company, Mr. A. B. Stevens, is nearing completion. This makes the forty-second craft built complete by this company. The launch will be 41½ ft. over all, 5 ft. beam and will draw about 18 in. of water. The machinery consists of a 20 four-cylinder high-speed gas engine of 25 H. P.

Merchant Marine Commission.

The sessions of the Merchant Marine Commission, which were suspended after the Boston hearing, will be resumed in Chicago on Friday of this week. Secretary Winthrop L. Marvin has preceded the commission in the lake cities in order to complete the details of the meetings. Senator Jacob H. Gallinger, chairman of the commission, will preside at the lake meetings. The Chicago meeting which, as stated, begins on Friday, will be held under the auspices of the Illinois Manufacturers' association and will continue throughout Saturday. It is the purpose of the commission to spend Sunday in Detroit as the guests of the Detroit Board of Commerce, and the hearings on Monday will be in the chamber of that body.

Tuesday and Wednesday of next week have been reserved for the Cleveland hearing, which will be in general charge of a special committee of the Chamber of Commerce. It is the purpose to have a powerful list of speakers at all these meetings, because it is realized that the west is really more concerned in the question of the revival of the American merchant marine than is the east. It is the manufacturers and farmers of the west who are most interested in having the avenues of transportation open to their products at all times. While the American home market is the greatest market in the world, it is insufficient for the productive energy of the people, and the surplus products must always, therefore, be marketed abroad. The foreign market cannot be cultivated through the moderation or the forbearance or the favor of foreign interests. Therefore it is essential that the over-sea trade of the American people should be carried in American ships, and it is the purpose of these meetings to discover how best this can be done. It is expected that the meetings in the great lake cities will be the most enthusiastic that the commission has held.

While the commission was in the east a number of very excellent addresses were delivered before it which the Review at that time had not the space to publish. However, they have been preserved and will be given in later issues. One of the most powerful of these addresses was delivered by Mr. Edward C. Plummer, who went most exhaustively into the subject, and was as follows:

"I propose to point out the causes of our loss of, and a method to restore our ocean shipping, and that without violating treaties or American traditions. One hundred and thirteen years ago congress appointed its first committee to investigate the need of the interest now entrusted to you. The committee then consisted of only one man—but that man was Thomas Jefferson. And though congress had already done so much for shipping that our fleet engaged in the foreign carrying trade was prosperous and steadily increasing, Thomas Jefferson recommended such further and radical methods of assistance that he was openly charged in congress with planning to destroy our foreign trade and to bring on a commercial war with Great Britain—words so familiar today.

SHIPPING SHOULD BE A NON-PARTISAN QUESTION.

"But fortunately shipping was then treated as a non-partisan question; though it is an interesting fact that the strongest advocates of government aid for shipping at that time were followers of Jefferson, while most of those who opposed increased assistance were Federals; yet even those who opposed Jefferson's plans most fiercely, as will be seen from the severe speech delivered in congress Jan. 13, 1794, based their opposition on the admitted facts that shipping was already very prosperous, that we had already secured the carrying of more than one-half of our foreign commerce and that, therefore, we should let well enough alone. But Jefferson, comparing navigation with our other great industries, realizing its supreme importance, met all opposition with these crushing words (American State Paper, vol. 1, p. 433): 'Our navigation involves still higher consideration. As a branch of industry it is invaluable but as a resource of defense essential. Its value as a branch of industry in enhanced by the dependence by so many other branches upon it. In times of peace it multiplies competitors for employment in transportation and so keeps that at its proper level; and in times of war if we have not within ourselves the means of transportation our produce must be exported in belligerent bottoms at the increased expense of war freights and insurance, and the articles which will not bear that must perish on our hands. But it is as a resource of defence that our navigation will admit neither neglect or forbearance. It is not to the moderation and justice of others that we are to trust for fair and equal access to market with our production, or for our due share in the transportation of it, but to our own means of independence and the firm will to use them.' And they used them.

"So well did Washington understand these truths that his record in behalf of shipping is superior to that of any other president. Not that others lack interest—he left nothing for them to do, until his work had been undone. Three times he applied to congress for legislation in behalf of American shipping, and three times those old patriots met his desires. In their reply to his last suggestion for still further legislation in aid of our merchant marine, these members of congress declared: 'The encouragement of our own navigation has at all times appeared to us highly important. It will be incumbent on us to consider in what mode our commerce and agriculture can best be relieved from an injurious dependence on the navigation of other nations.'

"What would they be doing to-day? The results of these efforts were fearless laws, giving the advantage of discriminations in tariff rates and tonnage dues to American shipping; and these laws so emphatically declaring that the nation's interests demanded the maintenance of a merchant marine sufficient for the ocean traffic of this country, left nothing to be added. Shipping flourished for more than half a century. Congress turned its attention to other things, now and then tearing away bits of the bulwark which had been constructed around shipping until now, when those arguments of the nation's founders are forgotten, unfriendly interests have so impressed themselves on legislation that most of our congressmen seem unable to realize that shipping can be a matter of vital interest to this whole country, but they are urged to look upon it as a sort of eastern hog, for which the government is asked to provide fattening material. Thus it happens that today we may repeat the appeal of Edmund Randolph, one of the many appeals which found their answer in the legislation under Washington. (Virginia convention, June 6, 1788.) Said he: 'Cast your eyes to your seaports, see how commerce languishes; this country, with every advantage that can render commerce profitable, through defective legislation is deprived of all those benefits. As it is, the spirit of all commercial nations to engross the carrying trade, this makes it necessary to defend our commerce.'

JAMES MADISON'S FIRM POSITION.

"And James Madison, who entered the Virginia assembly in 1776, who was a delegate to the continental congress, a commanding representative in the commercial congress of the states, a member of the convention which considered the new constitution, and a member of congress during both of Washington's administrations, in his masterly speech on the proposed British treaty of 1796, a treaty proclaimed to be necessary in the interest of 'fair trade,' made these declarations and these concluding predictions, which come home with such startling force today (April 15, 1796):

"'I shall now, sir,' said he, 'consider the aspect in which the commercial articles of this treaty present themselves for consideration. In the free intercourse stipulated, between the United States and Great Britain, it cannot be pretended that any advantage is gained by the former. It is well known that when our government came into operation, the tonnage of America, employed in the British trade, bore a very inconsiderable proportion to the British tonnage. There being nothing on our side to counteract the influence of capital and other circumstances on the British side, this disproportion was the natural state of things. As some small balance to the British advantages, our laws have made several regulations in favor of our shipping. Under this encouragement the American tonnage has increased in a very respectable proportion to the British tonnage, and Great Britain has never deemed it prudent to frustrate or diminish the effect of this by attempting any countervailing measures for her shipping; being aware, no doubt, that we could easily preserve the difference by further measures on our side. But under this treaty she has reserved to herself the right to take such countervailing measures, and we have surrendered the right to pursue further defensive action. It is justly to be apprehended, therefore, that under a restoration of things to their former state the American tonnage will relax into its former disproportion to the British tonnage.'

"Such were the words of Madison, and nothing can more graphically illustrate the benefits of the wise legislation which he and Jefferson secured and the dangers of that policy which he opposed and which, when his warnings were forgotten, another generation permitted to succeed it, than a mere statement of our per capita tonnage engaged in the foreign trade during the years named. In 1790 there was one ton of shipping engaged in the foreign trade to every thirty-one of our inhabitants. In 1800 there was one ton to every eight inhabitants; in 1810 it was a fraction better; in 1820 it was one ton to every fifteen inhabitants; 1830, one ton to every twenty-two inhabitants; 1840, one ton to every twenty inhabitants; 1850, one ton to every fifteen inhabitants; 1860, one ton to every twelve inhabitants; 1870, one ton to every twenty-five inhabitants; 1880, one ton to every thirty-seven inhabitants; 1890, one ton to every sixty-six inhabitants.

FALL IN PER CAPITA TONNAGE.

"It will be noticed that not until 1880 did our per capita tonnage in the foreign trade drop below the point to which England has squeezed it while we were *legally* in her power; that the loss between 1880 and 1890 was almost as great as that during the Civil War decade. That in 1890 the amount but one-half what we had before our government was established, and that these 'aggravating' forms of aid to our shipping did not hurt our export trade is shown by this table given for five-year periods:

Exports for 1791	$17,571,551
Exports for 1796	67,064,097
Exports for 1801	93,020,513
Exports for 1806	103,787,000

a gain of 500 per cent in fifteen years. Under that policy of encouragement in shipping, the United States became a leader among maritime nations. How we have fallen from that high state is shown by the following figures taken from Lloyd's Register: English shipping (and here only vessels of 100 tons and upward are considered), 16,006,374 tons—the steamers alone numbering 8,553, of 14,193,582 tons. The United States stands with but 1,211 steamers, nearly one-half of them on the lakes. In modern tonnage Germany is already far ahead of us, her record being 1,425 steamers of 1,720,106 tons, while France is practically our equal in sea tonnage, showing 717 steamers of 1,153,761 tons. But the real force of these figures, the serious nature of our present national neglect of this giant industry, is brought out in the potential tonnage of these several countries, for a steamer can make more trips than a sailing vessel, and therefore her potential tonnage (the ability to carry freight) is far greater. England has a potential tonnage of 36,907,579 tons, or more than one-half the entire tonnage of the world; Germany, 7,345,747 tons; United States, 6,003,704 tons. England now shows a gain of 2,500,000 tons over the figures of the preceding year. Thus England leads the world on the sea today, as she has done for a century. How she gained this commanding lead is well stated in the Encyclopedia Britannica, vol. 21, page 827, edition of 1888. Says this frank British authority: 'The shipping of the Italian Republics excelled that of England in the middle ages. In the sixteenth century Spain was far ahead of her. But both Elizabeth and Charles offered bounties for the building of large craft (100 to 200 tons), and the legislature was also assiduous in endeavoring to encourage this industry. The preference was given to English ships, English built and English manned and was enforced in a manner that was prejudicial to the colonies. In 1790 her tonnage was 1,511,411 tons (U. S., 478,477 tons); 1830, excluding that of the colonies, it amounted to 2,199,959 tons (U. S., 1,191,776 tons). British commerce received an enormous development unparalleled in history, during the half century from 1826 to 1876. Shipping increased six-fold from 1840 to 1876.' It will be noticed that not only did shipping increase six-fold during a period of thirty-six years, during more than one-half of which time we were making our greatest record as carriers in the world's trade, but 'British commerce received an enormous development' from the time we removed those differential aids from our shipping, and it should be remembered that England did not repeal her navigation laws regarding British-built ships until 1849, when steam was coming to the front and she saw that her position would be improved. And she immediately (1854) had the business sense to put the management of her merchant marine in the hands of her Board of Trade, that it might be pushed forward by the combined skill of experts, unhampered by the blunders of uninformed legislators; and constantly increasing millions have been expended unhesitatingly to carry out the plans of those men.

BRITISH MERCHANT FLEET'S ENORMOUS EARNINGS.

"'Why should she do it?' The answer appears in the words of the secretary of the British Board of Trade in the second edition of his financial essays (Bell & Sons, London). Having given the vast amounts paid out annually for ocean carriage, he declares (p. 174): "Adding together the 60,000,000 (pounds, not dollars) for freight, and the 16,000,000 for miscellaneous charges, we arrive at a total of £76,000,000 ($380,000,00 in round numbers) as the share for cost of international conveyance annually due to the United Kingdom at the present time.' Concluding, he says: 'A country with a large carrying trade may export little in the shape of commodities, and yet be to all intents and purposes a considerable exporter. This outlay in wages and provisions of ships' crews, in equipping and repairing ships, in insurance and renewals, and the profits it earns, are all parts of its exports, as much as if they were stored up as commodities. That all of these questions are substantial and not formal is shown by a signal example of how much our view of the foreign trade of the United States, as compared with that of England, would be altered by taking account of this. It is a nice question if the United States of late years has been reducing its indebtedness abroad.' (This was written a dozen years ago.)

"The vast importance of shipping as a mere money making enterprise in which the whole nation is interested, is brought out by the fact that the earnings of the British merchant fleet, for the year named by the secretary just quoted, was almost exactly the same as the net earnings of all the United States

railroads for the same year. Employing more than 200,000 men in the mere operation of this merchant fleet, with wages amounting to $50,000,000, consuming $35,000,000 of provisions and requiring $75,000,000 in repairs, those vessels show annual earnings in the foreign carrying trade of $350,000,000 and sustain a business which justifies the annual construction of more than 800,000 tons of shipping, aside from the amount built for foreign owners; a total annual construction greater than the total amount of American shipping engaged in the foreign trade, and representing more than $100,000,000 in construction expenses alone. These tremendous sums of half a billion of money annually distributed to English artisans, producers and ship owners, present the real magnitude of this industry in which the people of the United States should share; and an industry which calls for the products of, and furnishes employment to, nearly every other industry in the country. Why, the entire hay crop of the United States is only about the value of the earnings of England's merchant fleet ($556,376,880). Our tremendous and high priced wheat crop, so often called the mainstay of American prosperity, exceeds but little the earnings of Britain's merchant vessels ($637,821,835), while the total exports of all our wheat and flour combined is but a fraction of the value of those earnings ($87,795,104—wheat, $73,756,404; flour, $161,551,508). Even the immense value of our vast cotton exports, $316,180,429, falls behind the earnings of that giant fleet which England has built up so quietly and to the support of which we contribute annually such immense sums. To the unfair and sophistical question, 'If others will carry freights for you cheaper than you can carry them yourselves, is it not best to let them do it?' I answer: 'Washington and Jefferson, Madison and Jackson all said 'No,' and I am still hunting for better Americans than they were. England has said 'no' to that question for 300 years; Bismarck said 'no,' and Germany is reaping the benefit of his wisdom; France has said 'no,' and Japan has said 'no' most emphatically; and the reasons for that reply, so well stated by the fathers of this nation in the days when all parties joined in building up shipping and in looking toward the ultimate good, instead of at the temporary objections which can always be so easily tossed at every distinctive national policy, have never been weakened. To the question of 'Why not free ships?' I answer that the legislation with which congress has burdened our shipping, aside from the fact of the higher wages paid, makes it impossible for us at present to compete successfully for the world's carrying trade; facts clearly established by the statistics collected during Mr. Cleveland's last administration. The fact that American ships are lying idle, or are being turned into barges for coasting service, because they cannot earn running expenses, to say nothing of their cost, is a complete answer to that question. There is one reason, and one alone, why any man acquainted with the shipping business would ask the privilege of putting foreign built ships under the American flag, and that is, to ram them into the coasting trade to compete with the high priced American built vessels now sailing there. But there is another reason, which I submit should be of itself conclusive against the policy of free ships. The chief reason why England is the ship yard of the world to-day is that the volume of her building is so enormous that her yards can specialize and duplicate, and to build an American merchant marine in her yards is merely to increase the volume of that business, and, consequently, to increase the building advantage, while taking from the American yards the very volume of work which is one of the most important things needed to insure cheap construction in the United States; so that free ships means the destruction of the American ship building industry. If it were true that it would not be possible for us within a reasonable time to build vessels in America as cheaply as they can be built in Europe, then it might be the part of statesmanship to let the industry perish. But it is not true. We ever, so long as the government permitted it, stayed in the van of shipping progress. We sent the first steamship across the ocean, we developed the clipper, and the type of ocean sail carrier that is now copied by the world. In the '50's we had the finest steamships afloat, headed by the Baltic, of 2,800 tons. We then had on the ocean (1851) a fleet of ninety-six steamers, of nearly 100,000 tons, employing 4,548 men, and a coast steam fleet of 635 vessels of 212,500 tons. (Congressional Globe, vol. 21, pp. 745, 1146, 1147; and Executive Document No. 42, Senate Documents of 1851-3.) And one of the men who helped place us in that high position and one of those statesmen who fought so ably to secure additional support and additional bounties to those fine ocean steamers in their war with the Cunarders, was Senator Lewis Cass of Michigan, who had been secretary of war under Andrew Jackson.

NO QUESTION OF AMERICAN ABILITY TO BUILD SHIPS.

"Given the same opportunities, the same volume of business, and the same encouragement to equip and supply ship building plants, and the government aid required while we created American experts in each department of ship building, a result only possible of attainment when the amount of work is sufficient to keep men steadily employed in their one particular branch of construction, there is no question but that we can build ships in America as cheaply as they build them in England. Our steel bridges and locomotives prove that, for you put a locomotive in a steel bridge and you've a steamship, and shipping has a claim on congress different from and greater than that of any other industry, for this, among other reasons: When the civil war closed there were nearly 1,000,000 tons of American shipping under foreign flags, put there for preservation and to hold the trade which had been been built up by American merchants, until peace should come; and congress refused to permit those vessels to return to the flag, compelled the American millions of capital to remain in them to build up our competitors' fleet. Then congress put such a tax on iron that it could not be used for ship construction, a mistake attempted to be rectified after we had practically strangled out of existence, in our heavy wooden ships and when free material in taxed yards could avail us nothing; and thus that great industry is dying. One party having assisted in pushing it into the grave, the other won't let anybody help it out; and about once in four years, they both hold up their hands and say: 'Alas, poor Yorick!' Probably that remark is of great assistance to poor old Yorick, who is getting in about his last kick.

"Subsidies are open to the objection that they are not self-regulating and may continue beyond the period when they are actually justified, while discriminating duties will necessitate the abrogation of treaties and may mean an imposition of duties on goods now imported free, while practically failing to reach the rich passengers of the great ocean liners. But the policy pursued by England in the use made of her light dues, the policy followed by our forefathers in the imposition of high tonnage taxes offers a solution, both simple and sure and one that can be put in force at once. The total of entries of vessels at United States ports last year (Com. of Navigation Rep., p. 120) amounted to 24,697,692 tons, of which 20,816,656 was foreign and but 3,881,036 tons American. Had a uniform tonnage tax of 50 cents per ton (the old foreign rate) been uniformly collected from these vessels, it would have made a marine fund of $12,348,846, of which the foreigner would have paid $10,408,328, while the American would have paid but $1,940,518.

ADVOCATES A TONNAGE TAX FUND.

This fund could then have been distributed among all vessels which engaged at all in the foreign trade, according to tonnage and miles sailed, on principles something similar to

those of the fishing bounties which this government formerly paid. As the amount of American tonnage increased, the contribution of the foreigners to this marine fund would decrease, the amount of money which American ships would receive would likewise decrease, and when we had attained the one-half of our carrying trade, which amount Fisher Ames declared to be our fair proportion, the sum which each vessel would receive would be so small that it would just about equalize the difference caused by our higher wages and better food, and there would be no inducement to an undue enlargement of our fleet. The details are matters of mathematics; I shall not go into them here, but I will point out that to this legislation our treaties are a protection instead of an obstruction. As this is a plan which can only benefit while the beneficiary is in the minority, it cannot be used against us. For example, England cannot put such a tax on us, because she would be compelled to put it on the vessels of other nations with which she does business; she cannot discriminate against us under the treaty, and her commerce will not permit that general taxing. Germany cannot use it against us for the same reason; she would have to put it on English vessels, and then what would become of those 'made in Germany' goods which find such a market in Britain. We could not do it successfully if we were a great carrying nation, but unfortunately on that score we are oppressively safe.

"What would be the result? The same that we achieved in the days when the government gave us a chance. We always paid our shipwrights higher wages than were paid in any other country, though compelled to gather our material from all along the Atlantic coast, but we developed the typical American vessel, and we took the business. You could tell those swift Baltimore clippers the minute their great sails broke through the horizon. Europe bought and copied them, but there was the something in them and in the man at the wheel that she couldn't copy—the same intangible something that appears on the waters of New York bay every time the experts of England come over here and take a cursory glance at the cup.

"We'd do what we have done on the great lakes. There's a type of vessel you cannot find elsewhere on the globe; more than 1,000,000 tons of characteristically American craft that can transport freight cheaper than any other water craft afloat, and still the owners of those vessels pay their builders and crews the high American wages.

"There's an inkling of what we would do in the giant freighters building at New London, and there is where the farmers and other exporters of this country are vitally interested in shipping.

CANADIAN THROUGH FREIGHT COMPETITION.

"With the great wheat regions of Canada being so rapidly developed, with those railroads and subsidized English steamers, supplied to insure Canadian products the cheapest transportation, where is the great western farmer going to be when that imminent struggle for agricultural supremacy comes on? What can save him and what can save other American exporters their foreign markets? Only the one thing, of American brains developing cheap methods of transportation that can afford to carry to market the corn which the Kansas farmer has so often burned, and the goods which Jefferson foresaw must otherwise perish on our hands. That I submit is the ultimate problem before this commission. Marine engineering doesn't stand still. The freighter of fifteen years ago is passed. Size has been the great factor there. But now comes machinery. We haven't a satisfactory water tube boiler; we don't know what oil fuel means; we can't tell the possibilities of the turbine engine. But we do know they're all in the air and liable to fall any minute. And when they fall there'll be a fall in freight rates that will put the present steam freighters out of business, and we don't want to be loaded up with them.

"What will bring these things down the quickest and save millions in the cost of transportation? American brains, as they've always done, and the sooner you set them to work the sooner that great saving will begin.

"Why don't we have American sailors? Because the total number of our vessels—ocean, coasting and great lakes combined, is constantly decreasing. In spite of our giant coasting fleet we've 8,000 less vessels than we had in 1868. In the '50's men left $3 and $4 a day in Bath to live in an ill-smelling hole called a forecastle and eat out of little wooden tubs, for $12 to $15 per month. Why? Because they dreamed of the day when they'd be captain. Now about the only thing the sea dreamer can see ahead of him is the poorhouse and he sheers off.

"We've been buncoed for thirty years. England says: 'I don't charge you any tonnage tax,' but she's been charging us light dues which were a good deal bigger, and our lights are free. France has been giving us the glad hand for years, and meanwhile, under some names that I can't pronounce, she's been charging us a franc a ton every time we called on her, and pays her entire tonnage and sailing bounties out of these collections, and we've been letting her off for six cents. Isn't it about time for us to say: 'We're after you, my dear Gaston'?

"And Norway, which has cut into our trade so severely, charges us thirty-five cents per ton, while we let her off for three cents and six cents.

"And Germany! Well, it makes me blush the way Germany unloaded the gold brick of no national tonnage dues on your Uncle Samuel; and he strutted about with it bulging in his coat tail pocket and banging against his legs, until he found that the only way for him to take advantage of that privilege was to send his ships into Germany by rail, as the seaports had reserved the right to collect all the dues which the imperial government did not. And that's the way they've been handing things to the American merchant marine for thirty years, and the government has been so busy with brown-tailed moths and boll weevils and garden seeds and in elevating the rent of some three-dollar postoffice that it hasn't had time to protect this great industry. We've been smitten on both cheeks by our adversary until the flesh is all gone, and now some Christian gentlemen suggest that we give him a crack at the bone. I draw the line at the bone.

"Now, you, gentlemen, have the power to give us a new deal, and it is in reality the permanent prosperity of this country that is now in your hands. Don't think I exaggerate—the continuous export of our products, only possible in the commercial conflict of the world now so imminent by the use of American vessels, with such economies as American vessels have created on the great lakes, is the foundation of national prosperity, and every citizen is directly interested there."

PERSONAL.

W. B. Castle, formerly secretary of the Republic Iron Co., has been appointed Cleveland representative of the vessel interests of Mr. A. B. Wolvin. Mr. Castle's headquarters are in the Wade building, Cleveland.

George Yale, who has been for nearly fifteen years mechanical superintendent of the dredging fleet of the Lachine canal, has been appointed mechanical superintendent of the Montreal harbor works, in succession to Mr. Bayfield, who resigned to take up private practice as civil engineer.

Eugene Henry has been appointed general western freight agent of the Lehigh Valley railroad with headquarters at Chicago. He will still remain in charge of the steamboat line, but Frank Gates, formerly Mr. Henry's assistant, will superintend the operating department of the lake steamers.

EXIT THE UNION; ENTER THE MASTER.

The Masters & Pilots' association, so far as the great lakes is concerned, is simply a memory. The masters have resigned from it in a body and the mates were required to leave it also before they were given positions aboard ship. The office effects of the association in Cleveland have been sold and the office closed. But while the fight of the Masters & Pilots' association against the vessel owners has resulted in the dissolution of the union, it has really ended in the triumph of the masters. When all's said and done the masters have really won this fight. It has effectually cleared the atmosphere and remedied a great many things that were irksome to the master. The masters were very jealous of the tendency displayed to limit their powers on shipboard and to deprive them, in the matter of appointments, of a considerable authority which they formerly exercised. The masters of some of the ships were certainly made to feel that their wings were being clipped. It is probably true that these little grievances bred the general dissatisfaction which resulted in the really insupportable demands which the captains finally made of the owners. Of course these demands were not granted, and in so far the victory was with the owners, as it should be; but, on the other hand, there has come about a general change of feeling and a disposition on the part of the owner to recognize certain rights inherent in the master's office, so that virtually it has been a victory as well for the masters. Undoubtedly a better feeling is going to prevail between masters and owners hereafter.

AROUND THE GREAT LAKES.

The Anchor line opened its passenger trade last week with the steamer Japan, which left Buffalo for Duluth.

The car ferry Ste. Marie, from Mackinac, has been docked for repairs at the plant of the Detroit Ship Building Co.

The steamers State of Ohio and State of New York have resumed the daily service between Cleveland and Toledo, stopping at Put-in-Bay.

The steamship Forest City, which went ashore last week near Tobermoray, in Georgian bay, has been abandoned to the underwriters as a total loss.

The People's Transit Co. will start a daily steamboat line on June 28, between Waukegan and Chicago, operating the steamers Argo and Frontenac. The line will carry no freight.

The steel lighter Batavia, building for the Lehigh Valley Transportation Co., for use in the Chicago river, was launched at the yards of the Empire Ship Building Co., at Buffalo last week.

The match race between the auto boats of Hollander & Tangeman and Smith & Mabley for a $2,000 gold cup will be run over the 30-mile course of the Larchmont Yacht club on Monday next.

The tug Tischer arrived at South Chicago last week from Peshito with car ferry No. 2 in a sinking condition, the result of a collision due to thick weather. The ferry was taken to Manitowoc for repairs.

During the convention of the International Longshoremen's association, which will be held in Milwaukee July 11, efforts will be made to have the headquarters of the organization changed from Detroit to Chicago.

The steamer Charles M. Warner, of the United States Transportation Co.'s fleet, will go into dry dock at Buffalo. She ran her bow into the breakwater, trying to pass the dangerous point without the aid of a tug.

Mabel Bradshaw, freight and passenger steamer of the White Line Transportation Co., will go into drydock for repairs to her rudder and examination of her bottom. She went ashore June 18 at Grand Portage.

The wooden sea-going dredge St. John was launched last week from the yard of the Greenport Basin & Construction Co., Greenport, L. I. The machinery for this dredge was supplied by the James Reilly Repair & Supply Co., New York.

The big steel steamer G. Watson French of the Elphicke fleet went aground opposite the United States fish hatchery at Lester Park last week, but was released without damage by the tugs Superior, Helm and Excelsior. A dense fog prevailed at the time.

One of the most valuable cargoes brought by lake into South Chicago was that of the steamer Sonora, which arrived this week with 190,000 bushels of flax seed. At the present price the consignment is worth about $203,000. The flax seed was from Duluth and was consigned to the American Linseed Oil Co.

Chicago importers were notified on June 20 by Collector of Customs Nixon that hereafter special receipts for duties paid will not be issued, the permits for the withdrawal of goods being sufficient evidence that the duty has been paid. This change comes as a result of the appointment of a naval officer to Chicago.

Maj. Dan C. Kingman, government engineer of Cleveland, has given final instructions to the county commissioner of Ashtabula that the swing bridge at Ashtabula harbor must be removed by April 15 of next year. The present type of bridge obstructs navigation and it will have to be replaced by one which does not.

The new side-wheel steamer City of Benton Harbor, built by the Craig Ship Building Co. of Toledo for the Graham & Morton Transportation Co. of Chicago, left Toledo for her home port last week. She is a trim looking craft and attracted much attention on her maiden trip. A special party, guests of the company, were aboard.

Two steamers, the R. W. England, built by the Great Lakes Engineering Works of Detroit for the England Transportation Co., and the Utica, built by the Detroit Ship Building Co. for the Western Transit Co., had their trial trips last week. The performance of both vessels was quite satisfactory. The Utica later left for Buffalo to go on her route between that port and the head of the lakes. The England left later for Ashtabula for a cargo of coal.

In endeavoring to throw a line to the steamer Frank Gilchrist at Port Huron last week, the boat of Will Pfanner, a reporter for the Lynn Marine Reporting Agency, was sucked into the stern of the big steamer and smashed by the propeller. Pfanner's right leg was broken at the hip and ankle. With remarkable nerve Pfanner swam in this condition from the rapids where the accident occurred to the shore, a distance of nearly half a mile, where he was picked up by the ferry Eagle.

CANADIAN SHIPPING NOTES.

W. R. MacInnes, assistant manager for the Furness Withy line of steamers at Halifax, N. S., has resigned.

The Montreal Transportation Co. will rebuild the burned steamer Advance and use her on the lakes as a coal carrier.

The Richelieu & Ontario Navigation Co. has decided to raise the wreck of the Canada, and reconstruct it at its shops, Sorel, Que. The estimated cost is $80,000.

Dickie & McGrath is having built a new tug for the lumber business. The hull was built at Shelbourne, N. S., and the engines are being installed at Yarmouth, N. S.

The Antarctic exploration steamer, which the Dominion government recently purchased in Germany, arrived in Quebec June 13, after a thirty-nine days' trip from Bremerhaven.

The Star Line Co. have purchased a new boat for the Gagetown-Fredericton route from the Richelieu & Ontario company. She is a single screw boat and will carry 250 passengers.

The Canadian Pacific railway is considering plans for a new passenger steamer for its service on Kootenay lake, B. C. It

has just completed a new 15-car freight barge for Kootenay lake.

Glace Bay harbor is to be opened and improved, the Dominion government having voted $25,000, and the Dominion Coal Co. will probably expend $65,000 more in rebuilding shipping piers, dredging, etc.

The Dominion government has under construction at Selkirk, Man., the hull of a new steamer to replace the Victoria on Lake Winnipeg. The machinery from the old steamer will be placed in the new hull.

Construction of the steel frame for a floating dry dock for Vancouver has been begun in England. E. E. Ling is consulting engineer representing New York capitalists. The cost of the dock will exceed $1,000,000.

The Ontario Electric Railway Co., of which E. T. Pond of Boston, Mass., is one of the principal promoters, is considering a plan to place steamers on a run between Kingston and Montreal, mainly for freight purposes.

Navigation of the St. Lawrence is to be improved at Cap la Roche. The plan of dredging, which would involve an outlay of $6,000,000, will probably be adopted upon the report of Mr. Wisner, an eminent authority.

The Union Steamship Co. has just received a tug 81 ft. 6 in. in length, 18 ft. beam, fitted with compound engines, 13 and 26 in. cylinders by 18 in. stroke, built at the Cates yard, False creek, Vancouver, B. C. The engines were imported from Scotland.

The new steel dredge built at Lilloet, to meet the requirements of gold dredging on a swiftly flowing river, will soon begin operating on the Fraser river bars. This dredge is the largest of its kind in Canada and was constructed at a cost of $87,000.

A company has been given a Dominion charter to purchase the steamer Richard and other vessels and to engage in a general navigation business. The capital is $40,000, and the offices are at North Sydney, N. S. W. Hackett, North Sydney, is one of the promoters.

The Canadian Pacific railway has entered into a contract to carry 15,000 tons of lead ore from British Columbia to England. This ore will be carried from Fort William to Owen Sound by the company's Upper Lake steamers, and from Montreal by its Atlantic steamers.

The Sincennes-McNaughton Co. has added another vessel to its Montreal fleet. It was built at Sorel and is named the F. Dupre. It is 80 ft. long, 20 ft. beam, with 10½ ft. draught, entirely of steel, engines with cylinders 18 in. by 36 in., 24 in. stroke, total cost amounting to $30,000.

The new wharf under construction at Victoria, B. C., for the Canadian Pacific railway, will be 430 ft. long by 90 ft. wide, and will have accommodation for six steamers alongside. There will be a shed 255 ft. by 60 ft. wide on the wharf for freight and passenger accommodations.

The Canadian Pacific Railway Co.'s steamer Princess May has been fined $2,600 for carrying thirteen passengers from Ketchikan, Alaska, to Vancouver, B. C., they being destined to Seattle, Wash., to which point they were subsequently ticketed by the C. P. R. by its steamer from Victoria, or by rail.

The proposal of the Dominion government to place the harbors at Port Arthur and Fort William, Ont., under the control of the harbor commission, is being opposed by the Dominion Marine Association, on the ground that the rates which the commissions will be empowered to charge will handicap the development of the trade.

The department of marine is conducting some experiments near Sorel, Que., with an electrical device for guiding steamers in narrow channels. Parallel lines of cables have been laid in the river, but not in the ship channel, for a length of two miles, in connection with the project. A report will be submitted to the department on the experiments.

INVESTIGATING THE SLOCUM DISASTER.

It is evident that the federal government intends to make a searching investigation of the disaster which overtook the steamer General Slocum in New York last week, whereby nearly 1,000 persons lost their lives. The investigation should be so thorough that nothing of the sort could possibly happen again on an American steamboat. It appears from the coroner's inquest that the crew was a makeshift collection of men hired at the cheapest rates; that the first mate was an ironmaker by trade and was not licensed to act as first mate; that the crew was an undisciplined lot and had not been accustomed to the fire drill; that the fire was discovered when it was of such dimensions that an adequate fire equipment would easily have extinguished it; that the boat could have been beached long before she was; that the life preservers were rotten, and that the fire hose burst when water was turned into it. This is certainly an extraordinary state of affairs to exist on a steamboat whose business it is to carry excursion parties. As a rule the great majority of those who go on excursions are women and children, and they are not competent to care for themselves in times of panic. This fact alone should be the reason for safeguarding steamers of the General Slocum class with every possible device.

More than 200 witnesses have been summoned to appear at the inquest, and the federal government will be represented through the department of commerce and labor and the department of justice. As soon as the facts adduced warrant the federal government will proceed against those who are really to blame. Secretary Cortelyou of the department of commerce and labor, accompanied by General George Uhler, supervising inspector general of the steamboat inspection service, went over the route taken by the Slocum this week, in order to fix in his mind the precise circumstances which marked the trip of the Slocum. In order to make the trip exactly as it was made by the Slocum they took with them on the police boat Patrol Edwin H. Weaver, who was assistant pilot on the Slocum on the day of the disaster. Weaver said the first notification which he had of the fire was when the mate called up at the speaking tube that the boat was ablaze. When asked what he would have done had he had charge of the boat at the time, Weaver said he would have beached her at the foot of 129th street, which could have been done in a few minutes time. The evidence accumulates that the boat really could have been beached much sooner than she was and undoubtedly if she had been many lives would have been saved.

One rarely hears of losses of lives on the great ocean steamers, which are subjected to infinitely greater hazards than befall a steamer plying exclusively in smooth water. The safety of the ocean liner is secured by rigid rules of construction and by unswerving discipline. Were the same rules applied to the excursion service no such catastrophe as that of the Slocum could possibly occur.

The Cleveland-Cliffs Iron Co. of Cleveland have just issued a little book descriptive of the exhibit of the Cleveland-Cliffs Iron Co. and the Pioneer Iron Co. in the mines and metallurgy building at the Louisiana purchase exposition. The general title of the book is "From the Forest to the Product." It contains a most thorough-going description of the charcoal furnaces and chemical plant of the Pioneer Iron Co. of Marquette, Mich., which is justly regarded as a model of its kind. The book is bound in red and is convenient for the pocket.

The Dominion government has accepted the recommendations of the harbor board that the $2,500,000 system of steel freight sheds should be awarded to Messrs. Peter Lyall & Sons. According to the terms the contractors are required to proceed with the construction of four sheds at once. Fourteen sheds in all are to be built.

AFFAIRS AT HEAD OF THE LAKES.

Duluth, Minn., June 22.—Grain stocks have decreased considerably the past week and now amount to 8,560,000 bu. Of this 1,302,000 bu. are wheat and 7.080,000 flax. The receipts of grain at the head of the lake have been a trifle better the past week and were 302,000 bu. for the week. Shipments of all grains amounted to 1,500,000 bu. Shippers are making sales of considerable Duluth wheat to the east for immediate delivery and stocks here will be materially reduced another week and bid fair to be very small in July. The wheat rate to Buffalo is weakening and is now 1¾ cents.

The Barnett & Record Co., dock and elevator builders, have bought water-front property at Superior and will utilize it for a headquarters storage yard for their Lake Superior business. They now have a large amount of elevator construction under way at the Canadian head of the lake.

There has been some fog at the Duluth-Superior harbor the past week. On Saturday, while the tug Record was towing the White & Friant to the docks of Alger, Smith & Co. for a lumber cargo the hawser slipped and for two hours the tug searched aimlessly for the schooner, unable to find her. This is one of the most remarkable and amusing losses that has ever occurred in this harbor.

Transfer of the new steel ship Sahara to the Globe Steamship Co., G. A. Tomlinson, president, has been filed at the Duluth customs office.

ITEMS OF GENERAL INTEREST.

The side-wheeler Urania is in the Detroit dry dock for repairs preparatory to opening the season.

The Merrill-Stevens Co., Jacksonville, Fla., is preparing to build a river steamer for Capt. Gibson of Savannah, Ga., which will cost about $25,000.

The Peninsula & Oriental liner Australia, inward bound, struck at the eastern entrance of Port Phillip bay, Australia, last week. It is feared that she is badly damaged.

The steamer Joe Milton, Capt. Ferguson, was burned to the water's edge on June 19 at Papoose island. The steamer grounded and the lurch caused a lamp to upset in the forecastle.

The Two Rivers Coal Co. of Two Rivers, Wis., has completed a large new coal dock. The dock will be used as an unloading point for shipments into the northwest. It cost $35,000.

Messrs. L. P. & J. A. Smith of Cleveland have bought the steamer Rhoda Stewart and the barges Racine, Grandy and Constitution. They will be placed in the stone trade between the islands and Cleveland.

The barge Madeira, bound up, and the steamer Princetown, bound down, both belonging to the Pittsburg Steamship Co., were in collision at Sailors' encampment this week. The Madeira had seven plates damaged and the Princetown had a hole punched in her above the water line.

The new Cunard Line steamer Panonia arrived in New York last week on her maiden trip. She sailed from Trieste, Fiume, Palerma and Gibraltar in the company's Mediterranean service. The Panonia was built by John Brown & Co., Clydebank, Scotland. She is a four-masted, single-funnel steamship with twin screws.

The Monongahela River Consolidated Coal & Coke Co., Pittsburg, recently purchased the entire fleet of floating property of the Southern Railroad Co., at Greenville, Miss., excepting the dry docks, the tug Cooper and a few barges. The property purchased includes the tow boats Birmingham and Resolute and about eighty coal boats and barges.

The reading pages of the Railroad Gazette will hereafter be printed in London in combination with the English railroad periodical transport. In order to do this the size of leaf of the Railroad Gazette will be changed. The new name of the paper will be Transport and Railroad Gazette and the combination will doubtless add greatly to the strength of both publications.

The Waywissimo, a cruising yacht owned by Alvin F. Sortell, Mayor Cambridge Springs, Mass., was launched last week from the yard of Charles Herring, Bath, Me. The yacht measures 60 ft. keel and 12 ft. beam. The house is 30 ft. long of mahogany for exterior and quartered oak inside. She is to be propelled by two motor engines of 23 H. P. each, driving twin screws.

The Zipalong, one of the fast auto boats, has been sold by the Gas Engine & Power Co., Morris Heights, New York, to F. W. Weller of Beaumont, Texas. She is equipped with a Speedway gasoline motor and is of the same type as the G-Whiz, built by the same company. The G-Whiz has been purchased by Mr. Colgate Hoyt of the New York Yacht club. She has been rechristened the Tide.

The Nipsic, one of the old wooden vessels of the navy, has been ordered out of commission at the Puget Sound navy yard, where she has been serving as a receiving ship. The Nipsic was launched in Washington in 1879 and has seen service in all parts of the world. She was the only American vessel which survived the hurricane at Samoa in 1889. She was scarcely worth salvage after the hurricane, but as a matter of sentiment the navy department repaired her. She will be replaced by the cruiser Philadelphia, which will serve as a receiving ship hereafter.

The biggest dredging outfit at any point on the lakes will be stationed in the lower Detroit river. G. H. Breymann & Bros. of Toledo, who secured a contract for widening and deepening the Lime Kiln crossing, Detroit river, has turned over the contract to Dunbar & Sullivan of Detroit. The channel over the Amherstburg reach and out into Lake Erie as far as Bar Point will also be widened and deepened. The latter contract calls for a clear channel depth of 21 ft. for a minimum width of 300 ft. and for a possible maximum width of 800 ft. from the south end of Lime Kiln crossing to deep water in Lake Erie, about nine miles in length.

OBITUARY.

Samuel H. Pine, one of the last of the men well known as builders of wooden ships, died in Brooklyn, June 3, eighty years old.

Capt. George Orr, a pioneer vessel captain of the great lakes, died June 16 at Detroit. Capt. Orr was born in Scotland in 1818 and began service at the age of thirty-two, remaining in service until the later 70's. He sailed the Chief Justice Waite between Sandusky and Buffalo.

Rear Admiral James A. Greer, retired, died at his home in Washington last week. He was born in Ohio in 1833 and was appointed to the navy in 1848. He served through the civil war, assisting in the removal of Mason and Slidell from the Trent, commanding a division of Admiral Porter's squadron at Vicksburg, and taking part in the Red river expedition. After the war he served on various important assignments, one of which was the command of the Tigress in the Polar relief expedition in 1873.

PROPOSAL FOR CONSTRUCTION OF BREAKWATER.—U. S. Engineer Office, 262 Huron Street, Cleveland, Ohio, June 18, 1904. Sealed proposals for constructing the East Breakwater at Black River (Lorain) Harbor, Ohio, will be received at this office until 2 P. M., July 18th, 1904, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application to this office. DAN C. KINGMAN, Major, Corps of Engineers, U. S. Army. July 14

PROPOSALS FOR DREDGE.—Mississippi River Commission, Fullerton Building, St. Louis, Mo, May 17, 1904.--Sealed proposals, in triplicate, for construction and delivery of self-propelling hydraulic dredge and ponton pipe line will be received here until 12 noon, standard time, June 25, 1904, and then publicly opened. Information furnished on application. WM. B. LADUE, Capt., Eng'rs, Sec'y. June 23

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Built of full length fir timber, 264 yards. For particulars enquire of Hickler Bros., Sault Ste Marie, Mich. tf

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Wanted to Buyor Charter.

Passenger and freight boat about 125 to 150 ft. long to carry about 500 passengers. Address Box 67, Marine Review, Cleveland. June 23

Steamboat Wanted.

Wanted—A steamboat about 100 to 130 ft. keel, suitable for passengers and freight. To run 12 to 16 miles per hour. Give full particulars as to age, depth, beam, engine, etc. James Purvis, Gore Bay, Ont. July 21

FOR SALE—The Union Transit Co.'s package freight steamer John M. Nichol. Rated A1½; length 263 ft., beam 41 ft , depth 26 ft. Triple expansion engines with 900 indicated H. P. Steel boiler house enclosing two Scotch boilers with steam pressure of 150 lbs. Steam capstans, windlass and steering apparatus. About $30.000 laid out for repairs in the past year. Retiring from business and will sell at sacrifice. Address H. C French, 994 Ellicott Square, Buffalo, N. Y. June 16

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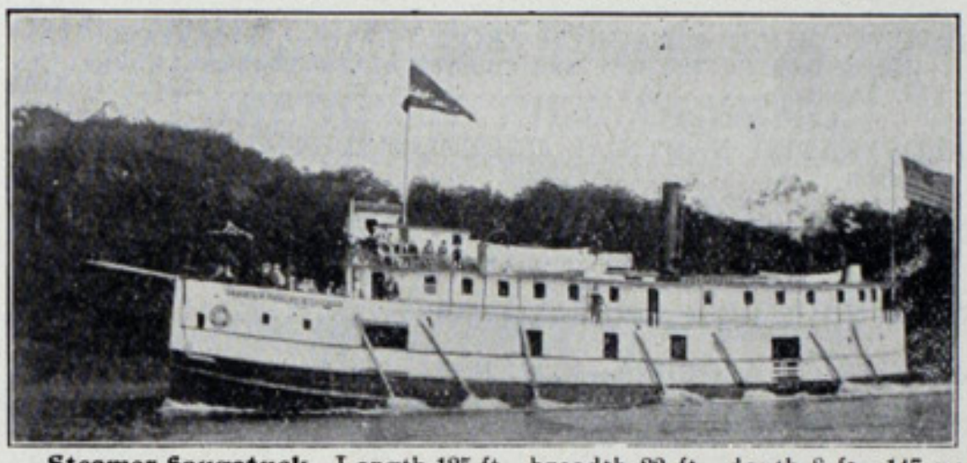

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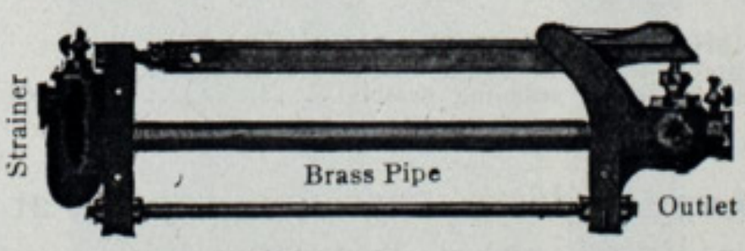

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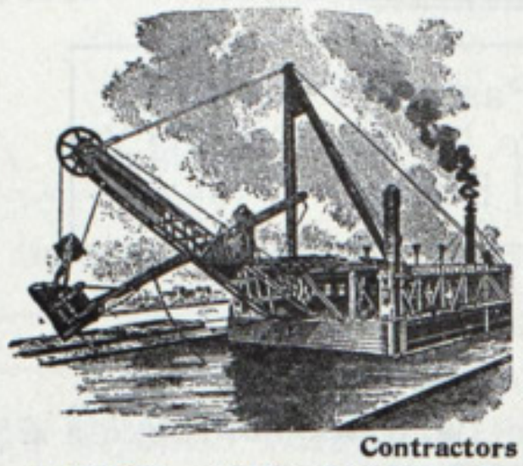

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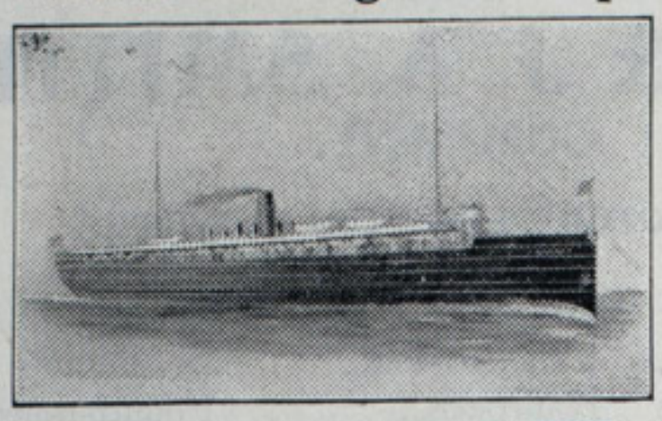

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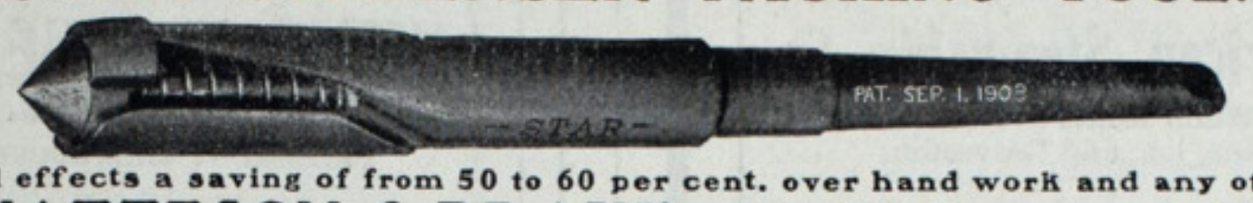

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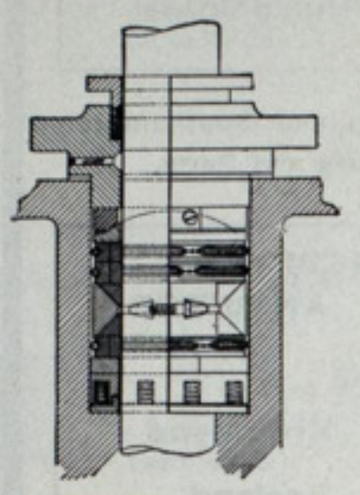

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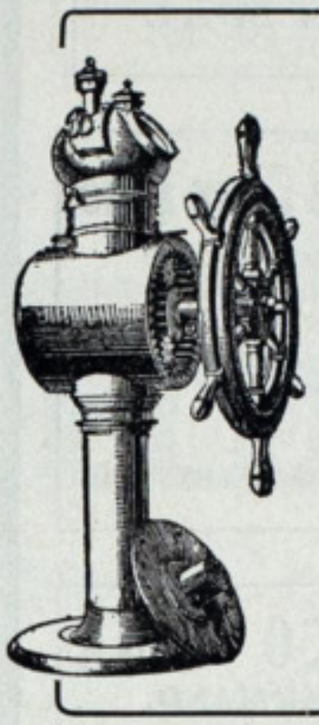

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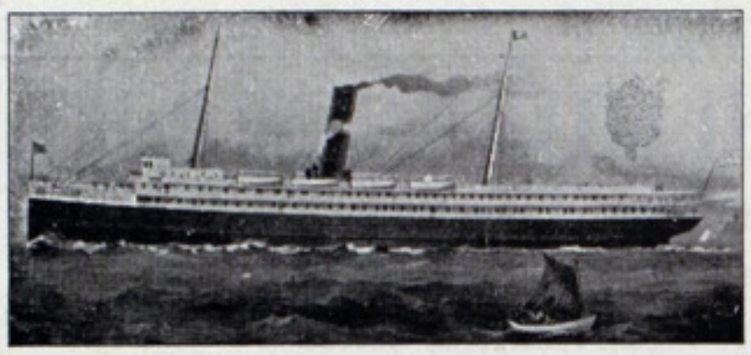

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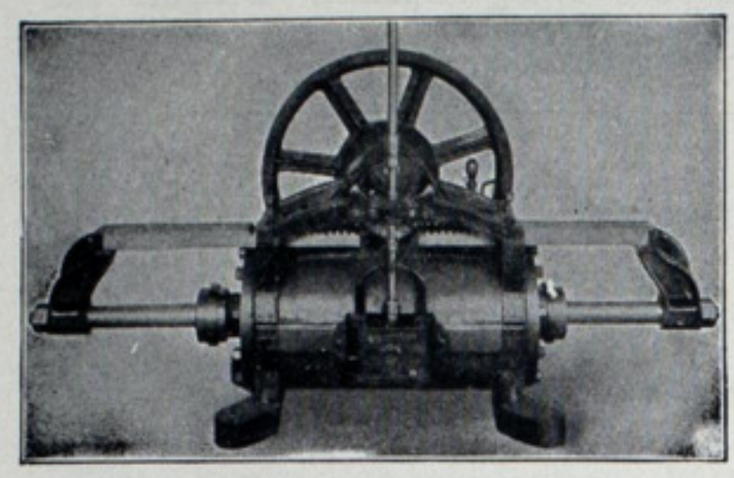

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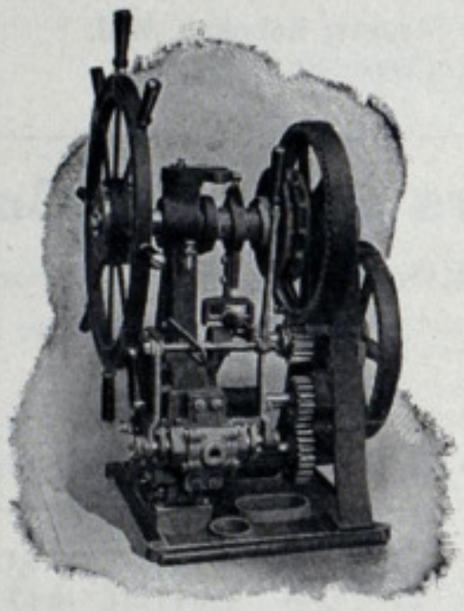

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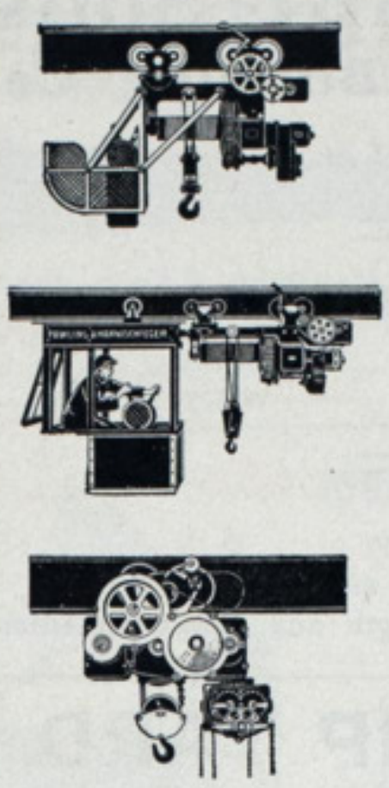

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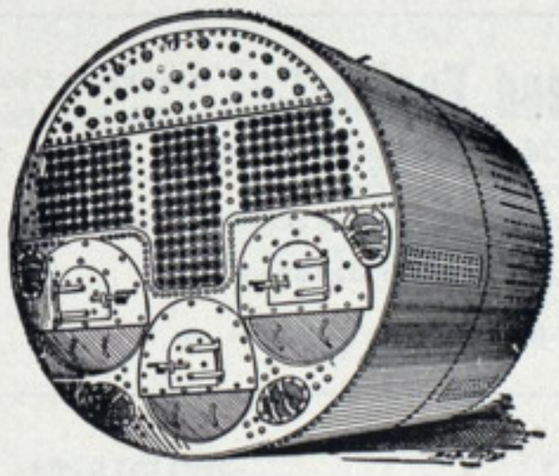

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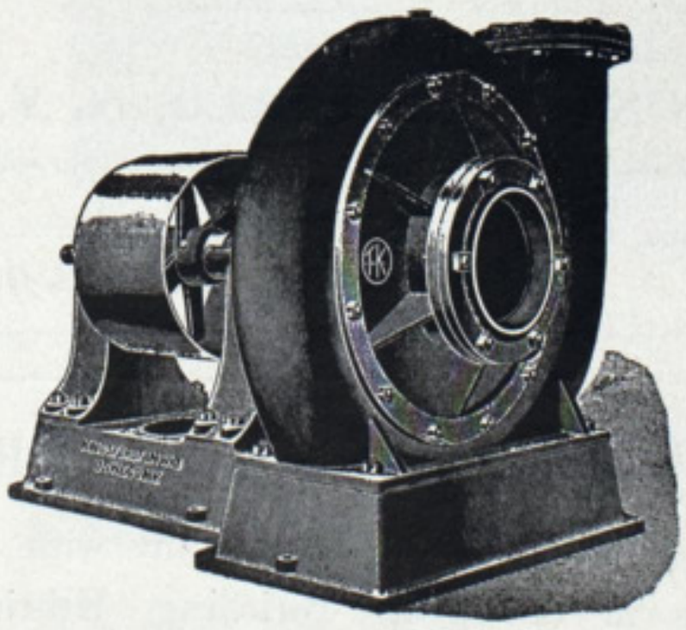

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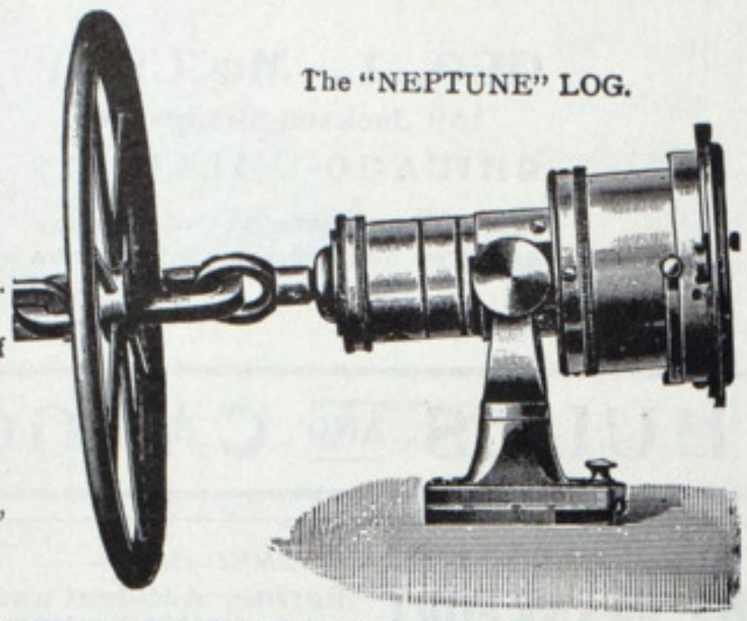

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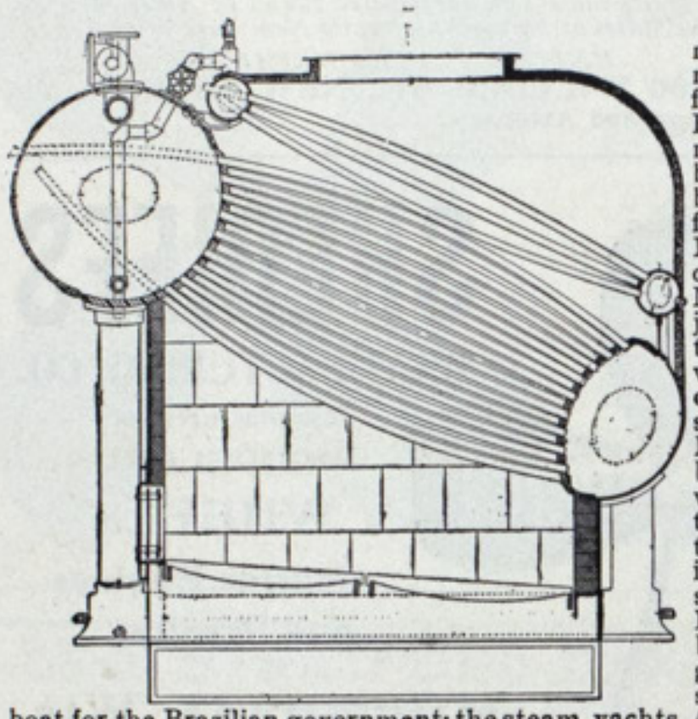

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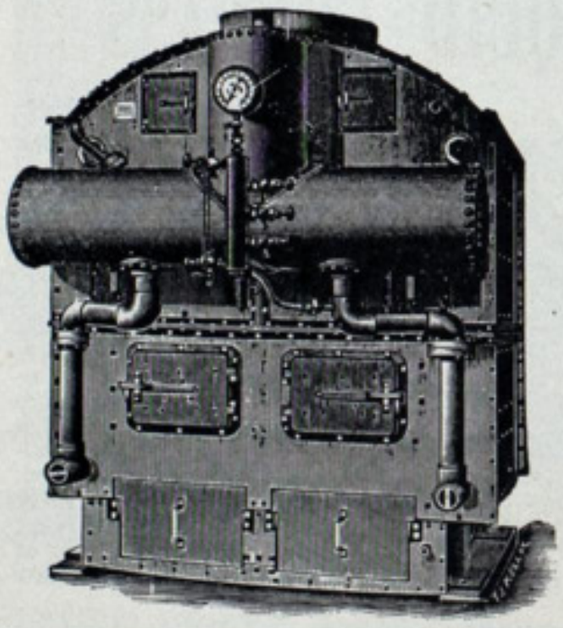

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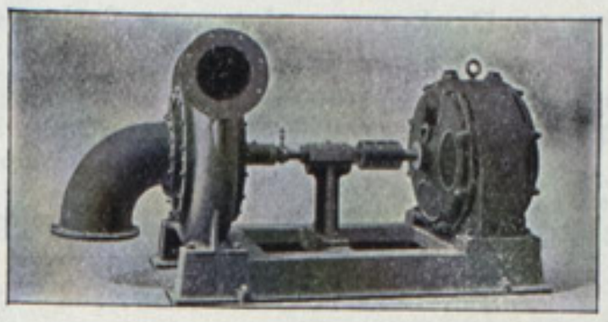

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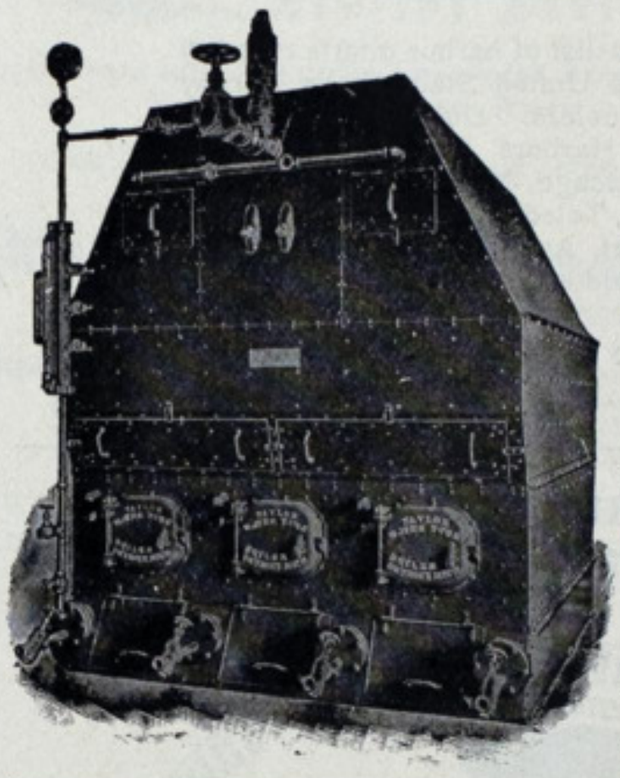

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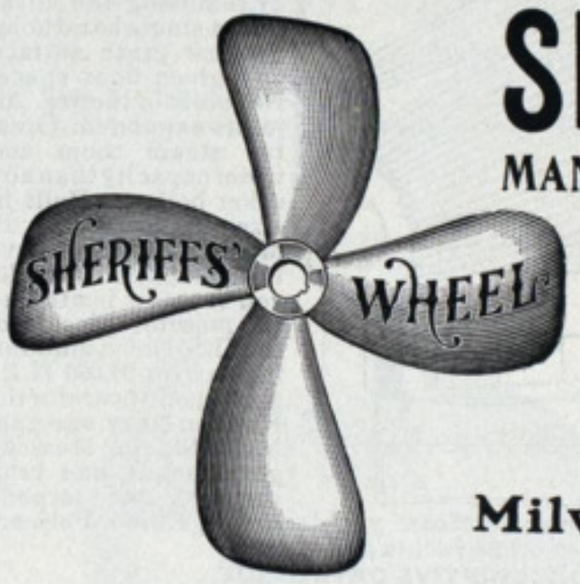

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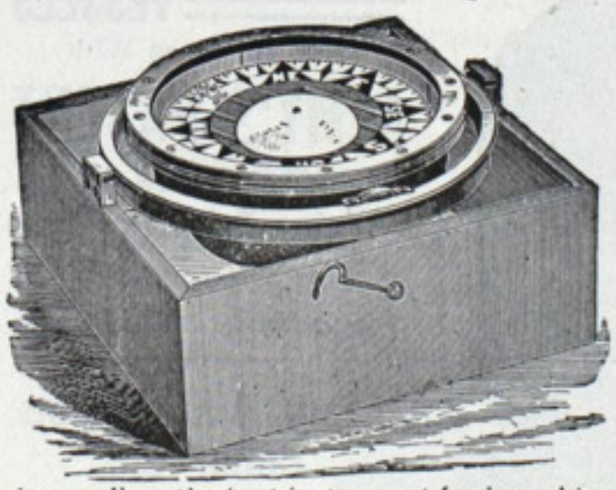

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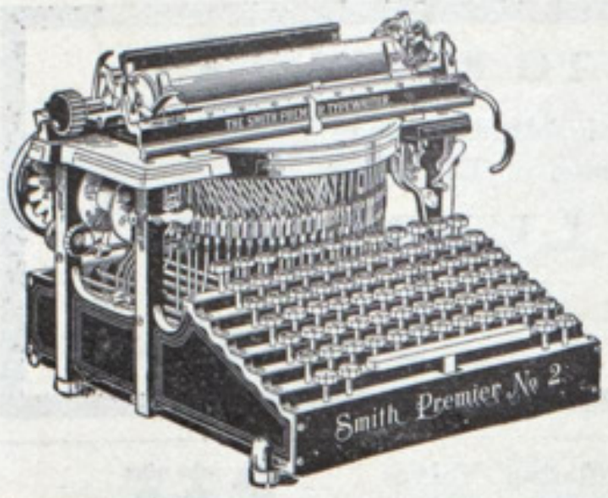

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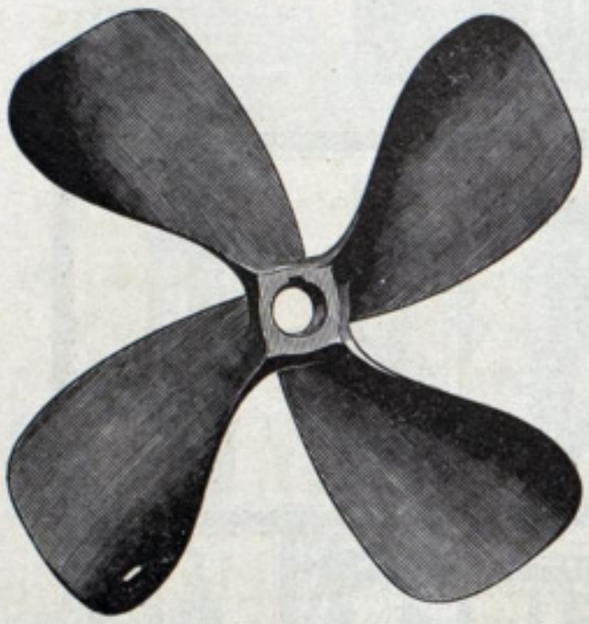

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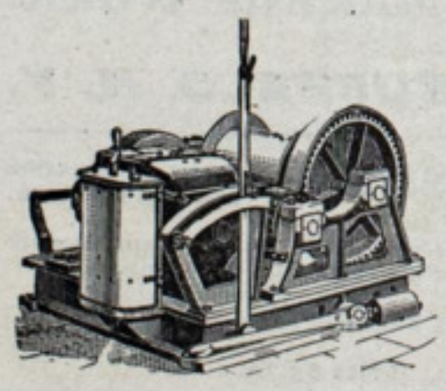

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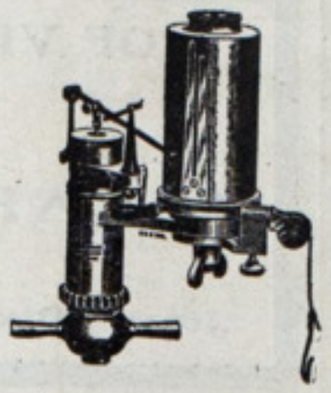

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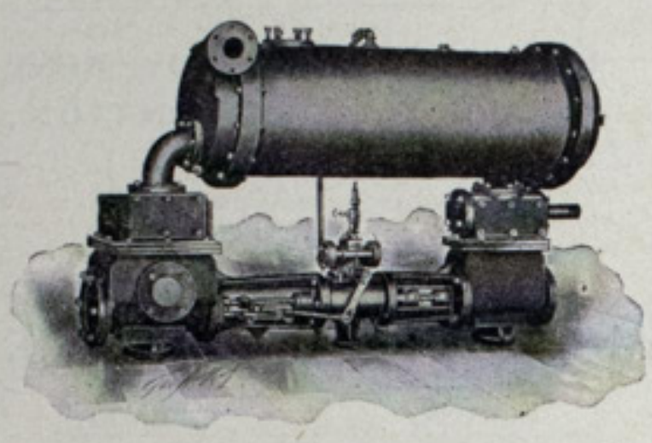

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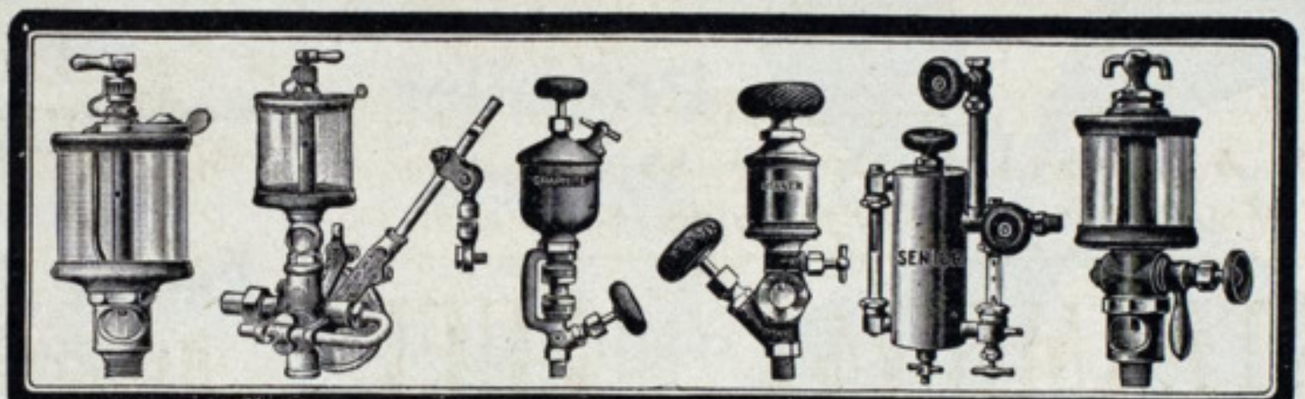

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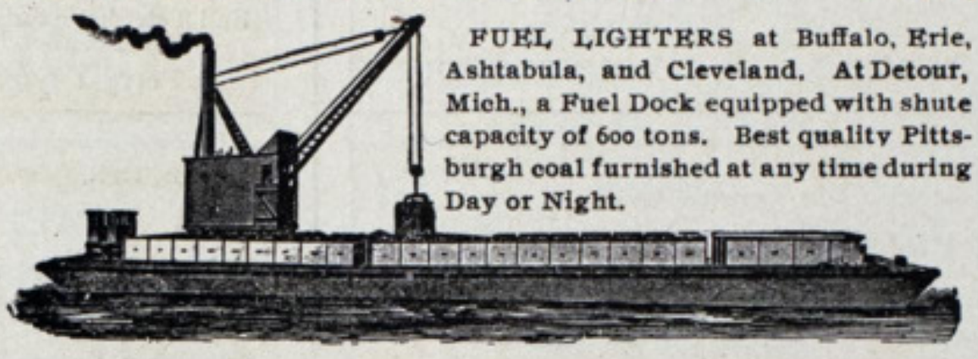

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Great Lakes Engineering Works.. Detroit.
Thropp & Sons Co., John E....Trenton, N. J.

CONTRACTORS SUPPLIES.
Contractors Supply & Equipment Co., Chicago.

CONTRACTORS FOR PUBLIC WORKS.
Buffalo Dredging Co.....Buffalo.
Chicago & Gt. Lakes Dredge & Dock Co.
..... Chicago.
Dunbar & Sullivan Dredging Co.....Buffalo.
Fitz-Simons & Connell Co.....Chicago.
Hickler Bros. .....Sault Ste. Marie, Mich.
Smith Co., L. P. & J. A.....Cleveland.
Starke Dredge & Dock Co., C. H..Milwaukee.
Sullivan, M. .....Detroit.

CORDAGE.
Baker & Co., H. H.....Buffalo.
DeGrauw, Aymar & Co.....New York.
Upson-Walton Co.....Cleveland.

CORK JACKETS AND RINGS.
Armstrong Cork Co.....Pittsburg, Pa.
Kahnweiler's Sons, D.....New York.

COURSE FINDER.
Field's Patent Course Finder.....Cleveland.

CHAIN CONVEYORS, HOISTS.
Brown Hoisting Machinery Co. (Inc.)....
..... Cleveland.
General Electric Co.....Schenectady, N. Y.
Lidgerwood Mfg. Co.....New York.
Westinghouse Electric & Mfg. Co.....
.....Pittsburg, Pa.

CRANES, TRAVELING.
Brown Hoisting Machinery Co.....Cleveland.
Lidgerwood Mfg. Co.....New York.
Pawling & Harnischfeger.....Milwaukee.

DIVING APPARATUS.
Morse, A. J. & Son.....Boston.
Schrader's Son, A.....New York.

DREDGING CONTRACTORS.
Buffalo Dredging Co.....Buffalo.
Chicago & Gt. Lakes Dredge & Dock Co..
..... Chicago.
Dunbar & Sullivan Dredging Co.....Buffalo.
Fitz-Simons & Connell Co.....Chicago.
Hickler Bros. .....Sault Ste. Marie, Mich.
Smith Co., L. P. & J. A.....Cleveland.
Starke Dredge & Dock Co., C. H...Milwaukee.
Sullivan, M. .....Detroit.

DRYING APPARATUS.
Bayley & Sons Co., Wm....Milwaukee, Wis.
Sturtevant, B. F. Co. .....Boston.

DRY DOCKS.
American Ship Building Co.....Cleveland.
Atlantic Works .....East Boston, Mass.
Buffalo Dry Dock Co.....Buffalo.
Chicago Ship Building Co.....Chicago.
Craig Ship Building Co.....Toledo, O.
Cramp, Wm. & Sons.....Philadelphia.
Detroit Ship Building Co.....Detroit.
Great Lakes Engineering Works.....Detroit.
Lockwood Mfg. Co.....East Boston, Mass.
Manitowoc Dry Dock Co.....Manitowoc, Wis.
Milwaukee Dry Dock Co.....Milwaukee.
Newport News Ship Building Co.....
.....Newport News, Va.
Shipowners Dry Dock Co.....Chicago.
Superior Ship Building Co....Superior, Wis.
United States Ship Building Co....New York.

Buyers' Directory of the Marine Trade.—*Continued.*

ELECTRIC HOISTS AND CRANES.

General Electric Co.....Schenectady, N. Y.
Lidgerwood Mfg. Co.....New York.
Pawling & Harnischfeger.....Milwaukee.
Westinghouse Electric & Mfg. Co.....
..... Pittsburg, Pa.

ELECTRIC LIGHT AND POWER PLANTS.

Bayley & Sons Co.....Milwaukee, Wis.
General Electric Co.....Schenectady, N. Y.
Mietz, Aug. .....New York.
Sturtevant, B. F. Co.....Boston.
Thropp & Sons, John E.....Trenton, N. J.
Westinghouse Electric & Mfg. Co.....
..... Pittsburg, Pa.

ENGINE BUILDERS, MARINE.

American Ship Building Co.....Cleveland.
Atlantic Works .....East Boston, Mass.
Bertram Engine Works Co., Ltd. .....
..... Toronto, Can.
Chicago Ship Building Co.....Chicago.
Chase Machine Co.....Cleveland.
Cramp, Wm. & Sons.....Philadelphia.
Craig Ship Building Co.....Toledo, O.
Dake Engine Co.....Grand Haven, Mich.
Detroit Ship Building Co.....Detroit.
Fletcher, W. & A. Co.....Hoboken, N. J.
Fore River Ship & Engine Co..Quincy, Mass.
Great Lakes Engineering Works Detroit, Mich.
Hall Bros. .....Philadelphia.
Jenks Ship Building Co....Port Huron, Mich.
Lockwood Mfg. Co.....East Boston, Mass.
Macbeth Iron Co.....Cleveland.
Mietz, Aug. .....New York.
Milwaukee Dry Dock Co.....Milwaukee.
Mosher, Chas. D.....New York.
Moulton Steering Engine Co.....New York.
Newport News Ship Building Co.....
.....Newport News, Va.
Northwestern Steam Boiler & Mfg. Co....
.....Duluth, Minn.
Roach's Ship Yard .....Chester, Pa.
Sheriffs Mfg. Co.....Milwaukee.
Superior Ship Building Co....Superior, Wis.
Thropp, J. E. & Sons Co.....Trenton, N. J.
Trout, H. G.....Buffalo.
United States Ship Building Co....New York.
Willard, Chas. P. & Co.....Chicago.

ENGINE ROOM TELEGRAPH, CALL BELLS, ETC.

Cory, Chas. & Son.....New York.
Marine Mfg. Supply Co.....New York.

ENGINEERING SPECIALTIES AND SUPPLIES.

Crane Co.....Chicago.
Kieley & Mueller .....New York.
Lunkenheimer Co. .....Cincinnati.
Mooers & Co., H.....Milwaukee.
New York Belting & Packing Co..New York.
Northwestern Steam Boiler & Mfg. Co....
.....Duluth, Minn.

ENGINEERS, MARINE, MECHANICAL, CONSULTING.

Hynd, Alexander .....Cleveland.
Hunt, Robt. W. & Co.....Chicago.
Kidd, Joseph .....Duluth, Minn.
Lovejoy, H. O.....Buffalo.
Matteson & Drake .....Philadelphia.
Mosher, Chas. D.....New York.
Nacey, James .....Cleveland.
Pittsburg Testing Laboratory, Ltd...Pittsburg.
Rice, Henry .....Buffalo.
Roelker, H. B.....New York.
Sadler, Perkins & Field.....New York.
Steel, Adam .....Cleveland.
Wood, W. J. .....Chicago.

FANS FOR VENTILATION, EXHAUST, ETC.

Sturtevant, B. F. Co.....Boston.

FEED WATER PURIFIERS AND HEATERS.

Ross Valve Co.....Troy, N. Y.

FIXTURES FOR LAMPS, OIL OR ELECTRIC.

General Electric Co.....Schenectady, N. Y.
Westinghouse Electric & Mfg. Co.....
.....Pittsburg, Pa.

FORGES.

Sturtevant, B. F. Co.....Boston.

FORGINGS FOR CRANK, PROPELLER OR THRUST SHAFTS, ETC.

Cleveland City Forge & Iron Co....Cleveland.
Fore River Ship & Engine Co..Quincy, Mass.
Macbeth Iron Co.....Cleveland.

FLUE WELDING.

Fix's, S. Sons .....Cleveland.

FURNACES FOR BOILERS.

Continental Iron Works.....New York.

FUELING COMPANIES AND COAL DEALERS.

Hanna, M. A. & Co.....Cleveland.
Ironville, Dock & Coal Co.....Toledo, O.
Parker Bros. Co., Ltd.....Detroit.
Picklands, Mather & Co.....Cleveland.
Pittsburg Coal Co.....Cleveland.
Smith, Stanley B., & Co.....Detroit,
Smith Coal & Dock Co., Stanley B.Toledo, O.
Youghiogheny & Lehigh Valley Coal Co..
..... Chicago.

GASKETS, RUBBER.

New York Belting & Packing Co..New York.

GAS BUOYS.

Safety Car Heating & Lighting Co..New York.

GAS AND GASOLINE ENGINES.

Chase Machine Co.....Cleveland.
Georgian Bay Engineering Works.....
..... Midland, Ont.
Reliance Mfg. Co..... City Island, New York.

GAUGES, STEAM AND VACUUM.

American Steam Gauge & Valve Mfg. Co.
..... Boston.
Ashton Valve Co.....Boston.
Lunkenheimer Co. .....Cincinnati.
Standard Gauge Mfg. Co.....Syracuse, N. Y.

GAUGES, WATER.

Bonner & Co., Wm. T.....Boston.
Lunkenheimer Co. .....Cincinnati, O.
Standard Gauge Mfg. Co.....Syracuse, N. Y.

GRAPHITE.

Dixon Crucible Co., Joseph..Jersey City, N. J.

HAMMERS, STEAM.

Chase Machine Co.....Cleveland.

HEATING APPARATUS.

Bayley & Sons Co., Wm.....Milwaukee, Wis.
Sturtevant, B. F. Co.....Boston.

HOISTS FOR CARGO, ETC.

American Ship Building Co.....Cleveland.
Brown Hoisting Machinery Co. (Inc.)....
..... Cleveland.
Chase Machine Co.....Cleveland.
Elwell-Parker Electric Co.....Cleveland.
General Electric Co.....New York.
Georgian Bay Engineering Works.....
..... Midland, Ont.
Hyde Windlass Co.....Bath, Me.
Lidgerwood Mfg. Co.....New York.
Marine Iron Co.....Bay City.
Mietz, Aug. .....New York.
Pawling & Harnischfeger .....Milwaukee.
Westinghouse Electric & Mfg. Co.....
.....Pittsburg, Pa.

HOLLOW STAYBOLT IRON.

Falls Hollow Staybolt Co...Cuyahoga Falls, O.

HOSE, RUBBER.

New York Belting & Packing Co..New York.

HYDRAULIC DREDGES.

Great Lakes Engineering Works.....Detroit.

HYDRAULIC TOOLS.

Watson-Stillman Co., The.....New York.

ICE MACHINERY.

Great Lakes Engineering Works.....Detroit.
Roelker, H. B.....New York.

INDICATORS FOR STEAM ENGINES.

American Steam Gauge Co.....Boston.
Ashton Valve Co.....Boston.

INJECTORS.

American Injector Co.....Detroit.
Crane Co. .....Chicago.
Jenkins Bros. .....New York.
Lunkenheimer Co. .....Cincinnati.
Penberthy Injector Co.....Detroit, Mich.

INSURANCE, MARINE.

Elphicke, C. W. & Co.....Chicago.
Fleming & Co., P. H.....Chicago.
Frankfort Marine, A. & P. G. Ins. Co....
..... New York.

INSURANCE, MARINE—Continued.

Gilchrist & Co., C. P.....Cleveland.
Hawgood & Co., W. A.....Cleveland.
Helm & Co., D. T.....Duluth.
Hutchinson & Co.....Cleveland.
McCarthy, T. R.....Montreal.
McCurdy, Geo. L.....Chicago.
Mitchell & Co.....Cleveland.
Parker Bros. Co., Ltd.....Detroit.
Peck, Chas. E. & W. F..New York & Chicago.
Prindiville & Co.....Chicago.
Richardson, W. C.....Cleveland.
Sullivan, D. & Co.....Chicago.
Voss, F. D.....New York.
Weeks, F. H.....New York.

IRON ORE AND PIG IRON.

Bourne-Fuller Co.....Cleveland.
Hanna, M. A. & Co.....Cleveland.
Pickands, Mather & Co.....Cleveland.

LAUNCHES—STEAM, NAPHTHA, ELECTRIC.

Georgian Bay Engineering Works.....
..... Midland, Ont.
Marine Construction & D. D. Co.....
.....Mariner's Harbor, S. I., N. Y.
Truscott Boat Mfg. Co.....St. Joseph, Mich.
Willard, Chas. P.....Chicago.

LIFE PRESERVERS, LIFE BOATS, BUOYS.

Armstrong, Cork Co.....Pittsburg.
Drein, Thos. & Son.....Wilmington, Del.
Kahnweiler's Sons, D. .....New York

LIGHTS, SIDE AND SIGNAL.

Russell & Watson .....Buffalo.

LOGS.

Walker & Sons, Thomas ....Birmingham, Eng.
Also Ship Chandlers.

LUBRICATING GRAPHITE.

Dixon Crucible Co., Joseph..Jersey City, N. J.

LUBRICATORS.

Crane Co. .....Chicago.
Lunkenheimer Co. .....Cincinnati.

LUMBER.

Martin-Barriss Co.....Cleveland.

MACHINISTS.

Chase Machine Co.....Cleveland.
Gogebic Steam Boiler Works....Duluth, Minn.
Hickler Bros. .....Sault Ste. Marie, Mich.
Lockwood Mfg. Co.....East Boston, Mass.
Macbeth Iron Co.....Cleveland.
Union Machine & Boiler Co.....Cleveland.

MACHINE TOOLS (WOOD WORKING).

Atlantic Works, Inc.....Philadelphia.

MARINE RAILWAYS.

Hickler Bros. .....Sault Ste. Marie, Mich.

MARINE GLUE.

Ferdinand & Co., L. W.....Boston, Mass.

MARINE RAILWAYS, BUILDERS OF.

Crandall & Son, H. I....East Boston, Mass.

MATTRESSES, CUSHIONS, BEDDING.

Fogg, M. W.....New York.

MECHANICAL DRAFT FOR BOILERS.

American Ship Building Co.....Cleveland.
Detroit Ship Building Co.....Detroit.
Great Lakes Engineering Works ..Detroit.
Sturtevant, B. F. Co.....Boston.

MELTING POT AND PAYING LADLE.

(For Paying Seams of Decks with Marine Glue.)

Ferdinand & Co., L. W.....Boston.

METALLIC PACKING.

Katzenstein, L. & Co.....New York.
U. S. Metallic Packing Co.....Philadelphia.

METAL POLISH.

Bertram's Oil Polish Co.....Boston

MOTORS, GENERATORS—ELECTRIC.

General Electric Co.....Schenectady, N. Y.
Bayley & Sons Co., Wm.....Milwaukee, Wis.
Sturtevant, B. F. Co.....Boston.
Westinghouse Electric & Mfg. Co.....
..... Pittsburg, Pa.

Buyers' Directory of the Marine Trade.—*Continued.*

NAUTICAL INSTRUMENTS.
Ritchie, E. S., & Sons.....Brookline, Mass.

NAVAL ARCHITECTS.
Hynd, Alexander .....Cleveland.
Kidd, Joseph.....Duluth, Minn.
Lovejoy, H. O.....Buffalo.
Matteson & Drake.....Philadelphia.
Mosher, Chas. D.....New York.
Nacey, James .....Cleveland.
Rice, Henry .....Buffalo.
Sadler, Perkins & Field.....New York.
Steel, Adam .....Cleveland.
Wood, W. J.....Chicago.

OAKUM.
DeGrauw, Aymar & Co.....New York.
Stratford, Oakum Co.....Jersey City, N. J.

OIL FOR PAINTING.
Sipe & Co., James B.....Allegheny, Pa.

OIL ENGINES.
Mietz, Aug. .....New York.

OILS AND LUBRICANTS.
Dixon Crucible Co., Joseph..Jersey City, N. J.
Standard Oil Co.....Cleveland.

PACKING.
Crane Co. .....Chicago.
Jenkins Bros. .....New York.
Katzenstein, L. & Co.....New York.
New York Belting & Packing Co...New York.
United States Metallic Packing Co.Philadelphia.

PACKING TOOL.
Matteson & Drake .....Philadelphia.

PAINTS.
Baker, Howard H. & Co.....Buffalo.
Detroit Varnish Co.....Detroit.
Detroit White Lead Works.....Detroit.
Forest City Paint and Varnish Co..Cleveland.
New Jersey Zinc Co.....New York.
Sipe & Co., James B.....Allegheny, Pa.
Upson-Walton Co. .....Cleveland.

PATTERN SHOP MACHINERY.
Atlantic Works, Inc.....Philadelphia.

PILE DRIVING AND SUBMARINE WORK.
Buffalo Dredging Co.....Buffalo.
Chicago & Gt. Lakes Dredge & Dock Co.. ..... Chicago.
Dunbar & Sullivan Dredging Co.....Buffalo.
Fitz-Simons & Connell Co.....Chicago.
Hickler Bros. .....Sault Ste. Marie, Mich.
Parker Bros. Co., Ltd.....Detroit.
Smith Co., L. P. & J. A.....Cleveland.
Starke Dredge & Dock Co., C. H...Milwaukee.
Sullivan, M. .....Detroit.

PIPE, WROUGHT IRON.
Bourne-Fuller Co.....Cleveland.
Crane Co. .....Chicago.
Macbeth Iron Co.....Cleveland.

PLANING MILL MACHINERY.
Atlantic Works, Inc.....Philadelphia.

PLATES—SHIP, STRUCTURAL, ETC.
Bourne-Fuller Co. .....Cleveland.
Otis Steel Co.....Cleveland.

PNEUMATIC TOOLS.
Allen, John F.....New York.

POLISH FOR METALS.
Bertram's Oil Polish Co.....Boston.

PRESSURE REGULATORS.
Kieley & Mueller .....New York.
Ross Valve Co.....Troy, N. Y.

PROPELLER WHEELS.
American Ship Building Co.....Cleveland.
Atlantic Works .... East Boston, Mass.
Cramp, Wm. & Sons.....Philadelphia.
Detroit Ship Building Co.....Detroit.
Fore River Ship & Engine Co..Quincy, Mass.
Great Lakes Engineering Works.. Detroit.
Hyde Windlass Co.....Bath, Me.
Jenks Ship Building Co....Port Huron, Mich.
Lockwood Mfg. Co.....East Boston, Mass.
Macbeth Iron Co.....Cleveland.
Milwaukee Dry Dock Co.....Milwaukee.
Newport News Ship Building Co..... .....Newport News, Va.
Phosphor Bronze Smelting Co., Ltd..... ..... Philadelphia.
Roelker, H. B.....New York.
Sheriffs Mfg. Co.....Milwaukee.
Superior Ship Building Co....Superior, Wis.
Thropp & Sons Co., J. E.....Trenton, N. J.
Trout, H. G.....Buffalo.
United States Ship Building Co....New York.

PROJECTORS, ELECTRIC.
General Electric Co.....Schenectady, N. Y.
Westinghouse Electric & Mfg. Co..... ..... Pittsburg, Pa.

PUMPS FOR VARIOUS PURPOSES.
Blake, Geo. F., Mfg. Co.....New York.
Great Lakes Engineering Works Detroit.
Kingsford Foundry & Machine Works.... ..... Oswego, N. Y.

PUNCHES, RIVETERS, SHEARS.
Allen, John F. .....New York.

RANGES.
Russell & Watson .....Buffalo

REFRIGERATING APPARATUS.
Great Lakes Engineering Works.....Detroit.
Roelker, H. B. .....New York.

REGISTER FOR CLASSIFICATION OF VESSELS.
Great Lakes Register .....Cleveland.
Record of American & Foreign Shipping.. .....New York.

REPAIRS—ENGINE AND BOILER.
(See also Boiler Manufacturers and Engine Builders.)
Georgian Bay Engineering Works..... .....Midland, Ont.
Gogebic Steam Boiler Works....Duluth, Minn.
Marine Iron Co.....Duluth, Minn.
Forest City Boiler Co.....Cleveland.

RIVETING MACHINES.
Allen, John F.....New York.

RIVETS, STEEL, FOR SHIPS AND BOILERS.
Bourne-Fuller Co.....Cleveland.

SAFETY VALVES.
American Steam Gauge & Valve Mfg. Co. ..... Boston.
Ashton Valve Co.....Boston.
Crane Co. .....Chicago.
Lunkenheimer Co. .....Cincinnati.

SAIL MAKERS.
Baker, Howard H. & Co.....Buffalo.
Upson-Walton Co.....Cleveland.
Wilson & Silsby .....Boston.

SALVAGE COMPANIES.
See Wrecking Companies.

SEARCH LIGHTS.
General Electric Co.....Schenectady, N. Y.
Westinghouse Electric & Mfg. Co..... .....Pittsburg, Pa.

SHEARS.
See Punches, Rivets, and Shears.

SHIP AND BOILER PLATES AND SHAPES.
Bourne-Fuller Co.....Cleveland.
Otis Steel Co.....Cleveland.

SHIP BUILDERS.
American Ship Building Co.....Cleveland.
Atlantic Works .....East Boston, Mass.
Bertram Engine Works Co., Ltd.Toronto, Can.
Buffalo Dry Dock Co.....Buffalo.
Cramp, Wm. & Sons.....Philadelphia.
Craig Ship Building Co.....Toledo, O.
Chicago Ship Building Co.....Chicago.
Detroit Ship Building Co.....Detroit.
Fore River Ship & Engine Co..Quincy, Mass.
Great Lakes Engineering Works.....Detroit.
Jenks Ship Building Co....Port Huron, Mich.
Lockwood Mfg. Co.....East Boston, Mass.
Manitowoc Dry Dock Co.....Manitowoc, Wis.
Milwaukee Dry Dock Co.....Milwaukee.
Newport News Ship Building Co..... .....Newport News, Va.
Roach's Ship Yard .....Chester, Pa.
Shipowner's Dry Dock Co.....Chicago.
Smith & Son, Abram.....Algonac, Mich.
United States Ship Building Co..New York.
Willard, Chas. P. & Co.....Chicago.

SHIP CHANDLERS.
Baker, Howard H. & Co.....Buffalo.
Marine Mfg. & Supply Co.....New York.
Upson-Walton Co.....Cleveland.

SHIP LANTERNS AND LAMPS.
Russell & Watson .....Buffalo.

SHIP TIMBER.
Martin-Barriss Co.....Cleveland.

SMOOTH-ON COMPOUND, FOR REPAIRS.
Smooth-On Mfg. Co.....Jersey City, N. J.

STAYBOLTS, IRON OR STEEL, HOLLOW OR SOLID.
Falls Hollow Staybolt Co..Cuyahoga Falls, O.

STEAM VESSELS FOR SALE.
Elwell, Jas. W. & Co.....New York.
Gilchrist & Co., C. P. .....Cleveland.
Holmes, Samuel .....New York.
McCarthy, T. R.....Montreal, Can.
Weeks, F. H.....New York.

STEAMSHIP LINES, PASS. AND FREIGHT.
American Line .....New York.
Anchor Line .....Buffalo.
Erie & Western Trans. Co.....Buffalo.
Goodrich Trans. Co.....Chicago.
International Mercantile Marine Co..... ..... Philadelphia.
Manitou Steamship Co.....Chicago.
Mexican-American S. S. Co..New Orleans, La.
Niagara, St. Catharines & Toronto Ry. & Nav. Co. .....St. Catharines, Ont.
Northern Michigan Trans. Co.....Chicago.
Red Star Line .....New York.
United Fruit Co .....Boston.

STEEL CASTINGS.
Macbeth Iron Co.....Cleveland.
Otis Steel Co.....Cleveland.
Seaboard Steel Casting Co.....Chester, Pa.

STEERING APPARATUS.
American Ship Building Co.....Cleveland.
Chase Machine Co.....Cleveland.
Dake Engine Co.....Grand Haven, Mich.
Detroit Ship Building Co.....Detroit.
Hyde Windlass Co.....Bath, Me.
Jenks Ship Building Co....Port Huron, Mich.
Marine Mfg. & Supply Co.....Cleveland.
Moulton Steering Engine Co.....New York.
Pawling & Harnischfeger .....Milwaukee.
Sheriffs Mfg. Co.....Milwaukee.

SUBMARINE DIVING APPARATUS.
Morse & Son, A. J.....Boston.
Schrader's Son, A.....New York.

SURVEYORS, MARINE.
Gaskin, Edward .....Buffalo.
Hynd, Alexander .....Cleveland.
Lovejoy, H. O.....Buffalo.
Matteson & Drake .....Philadelphia.
Parker Bros. Co., Ltd.....Detroit.
Nacey, James .....Cleveland.
Rice, Henry .....Buffalo.
Steel, Adam .....Cleveland.
Wood, W. J.....Chicago.

TESTS OF MATERIALS.
Hunt, Robert W. & Co.....Chicago.
Pittsburg Testing Laboratory, Ltd....Pittsburg.

TILING, INTERLOCKING RUBBER.
New York Belting & Packing Co...New York.

TOOLS, METAL WORKING, FOR SHIP AND ENGINE WORKS.
Allen, John F.....New York.
Watson-Stillman Co.....New York.

TOOLS, WOOD WORKING.
Atlantic Works, Inc.....Philadelphia.

TOWING MACHINES.
American Ship Windlass Co..Providence, R. I.
Chase Machine Co.....Cleveland.

TOWING COMPANIES.
Donnelly Salvage & Wrecking Co..... .....Kingston, Ont.
Great Lakes Towing Co.....Cleveland.
Midland Towing & Wrecking Co., Ltd.... .....Midland, Ont.

TRAPS, STEAM.
Kieley & Mueller .....New York.
Lunkenheimer Co. .....Cincinnati.
Sturtevant Co., B. F., Jamaica Plain..Boston.

TRUCKS.
Boston & Lockport Block Co.....Boston.

TUBING, SEAMLESS.
Shelby Steel Tube Co.....Pittsburg, Pa.

Buyers' Directory of the Marine Trade.—*Continued.*

VALVES, STEAM SPECIALTIES, ETC.

American Steam Gauge & Valve Mfg. Co. ..... Boston.
Ashton Valve Co.....Boston.
Crane Co. .....Chicago.
Jenkins Bros. .....New York.
Kieley & Mueller .....New York.
Lunkenheimer Co. .....Cincinnati.
Ross Valve Co.....Troy, N. Y.

VALVES FOR WATER AND GAS.

Ross Valve Co.....Troy, N. Y.

VARNISHES.

Detroit Varnish Co.....Detroit.
Detroit White Lead Works.....Detroit.
Forest City Paint & Varnish Co....Cleveland.
New Jersey Zinc Co.....New York.
Also Ship Chandlers.

VENTILATING APPARATUS FOR SHIPS.

Bayley & Sons Co., Wm.....Milwaukee, Wis.
Sturtevant, B. F. Co.....Boston.

VESSEL AND FREIGHT AGENTS.

Boland, John J.....Buffalo.
Brown & Co.....Buffalo.
Elwell, Jas. W. & Co.....New York.
Elphicke, C. W. & Co.....Chicago.
Fleming & Co., P. H. .....Chicago.
Gilchrist & Co., C. P.....Cleveland.
Hall & Root .....Buffalo.

VESSEL AND FREIGHT AGENTS—Con.

Helm & Co., D. T.....Duluth.
Hawgood & Co., W. A.....Cleveland.
Holmes, Samuel .....New York.
Hutchinson & Co.....Cleveland.
Lester, S. S.....Quebec, Can.
McCarthy, T. R.....Montreal.
Mitcheli & Co.....Cleveland.
Parker Bros. Co., Ltd.....Detroit.
Prindiville & Co.....Chicago.
Richardson, W. C.....Cleveland.
Sullivan, D. & Co.....Chicago.
Weeks, F. H.....New York.

WATER GAUGES.

Bonner & Co., Wm. T.....Boston
Lunkenheimer Co. .....Cincinnati, O.

WIRE ROPE AND WIRE ROPE FITTINGS.

Baker, H. H. & Co.....Buffalo.
DeGrauw, Aymar & Co.....New York.
Upson-Walton Co.....Cleveland.

WHISTLES, STEAM.

American Steam Gauge & Valve Mfg. Co. ..... Boston.
Ashton Valve Co.....Boston.
Lunkenheimer Co. .....Cincinnati.

WINDLASSES.

American Ship Windlass Co..Providence, R. I.
American Ship Building Co.....Cleveland.
Hyde Windlass Co.....Bath, Me.
Jenks Ship Building Co....Port Huron, Mich.
Marine Mfg. & Supply Co.....New York.

WINCHES.

American Ship Windlass Co..Providence, R. I.
Georgian Bay Engineering Works..... .....Midland, Ont.
Hyde Windlass Co.....Bath, Me.

WOOD WORKING MACHINERY.

Atlantic Works, Inc.....Philadelphia.

WRECKING AND SALVAGE COMPANIES.

Donnelly Salvage & Wrecking Co..... .....Kingston, Ont.
Great Lakes Towing Co.....Cleveland.
Midland Towing & Wrecking Co., Ltd... .....Midland, Ont.
Parker Bros. Co., Ltd.....Detroit.

YACHT AND BOAT BUILDERS.

Bertram Engine Works Co., Ltd..Toronto, Can.
Drein, Thos. & Son.....Wilmington, Del.
Georgian Bay Engineering Works..... .....Midland, Ont.
Truscott Boat Mfg. Co.....St. Joseph, Mich.
Willard, Chas. P. & Co.....Chicago.

YAWLS.

Drein, Thos. & Son.....Wilmington, Del.

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Bayley & Sons Co., Wm 4
Baldt Anchor Co 55
Baker, Howard H., & Co.. 56
*Bertram Engine Works Co. Ltd. 41
Blake, Geo. F., Mfg. Co 14
Boland, J. J 48
*Boston & Lockport Block Co.... 35
Bourne-Fuller Co 14
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Brown Hoisting Machinery Co., Inc 2
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Buffalo Dry Dock Co 10

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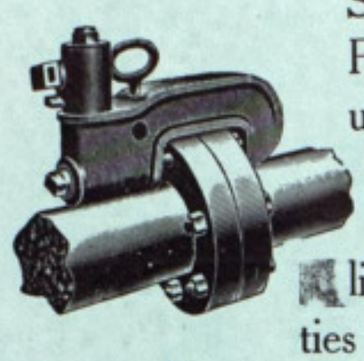

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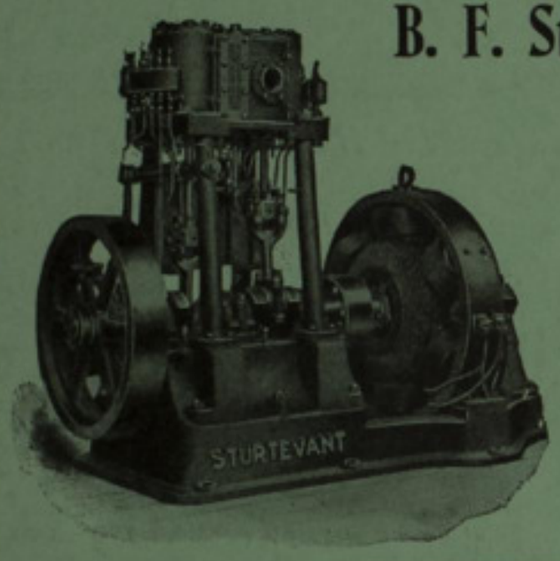

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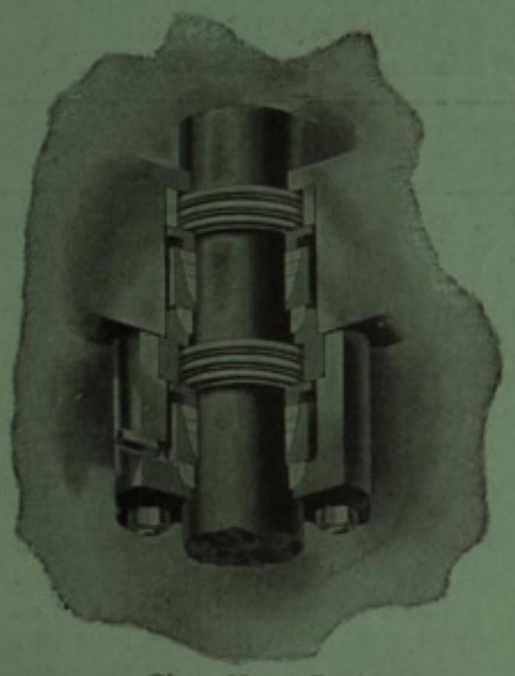

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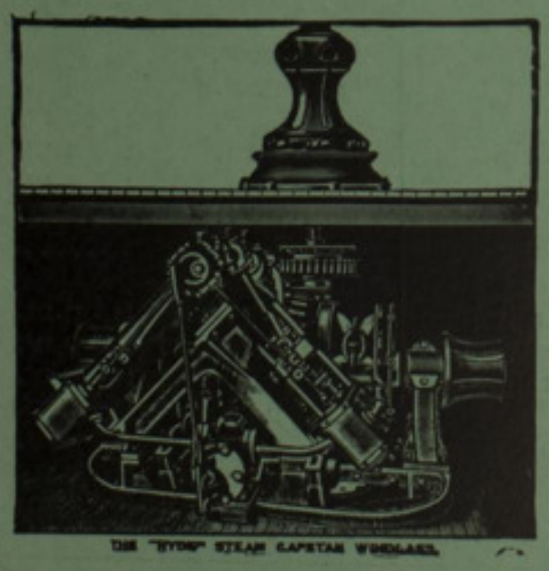

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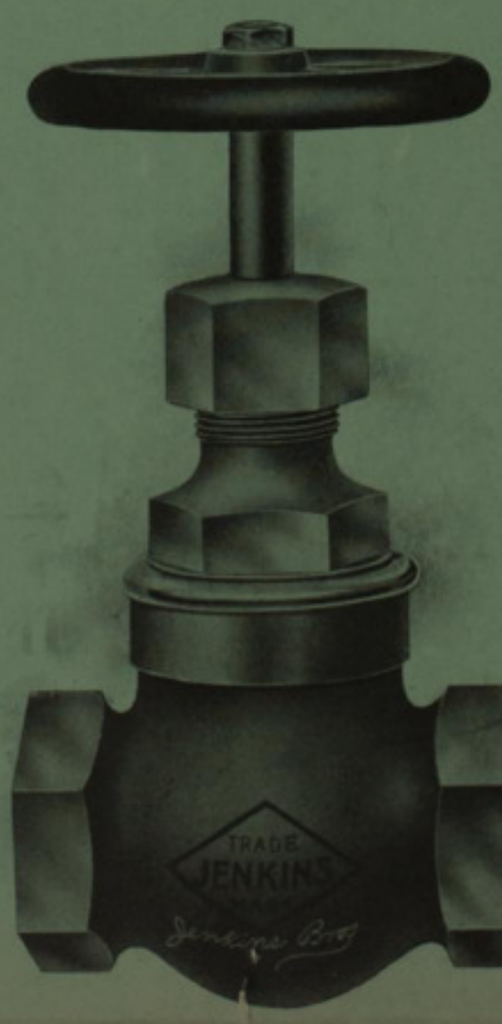

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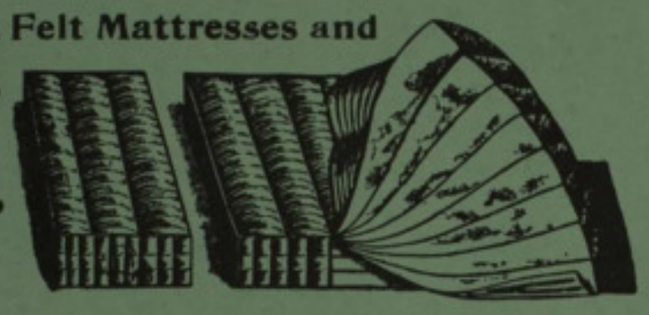

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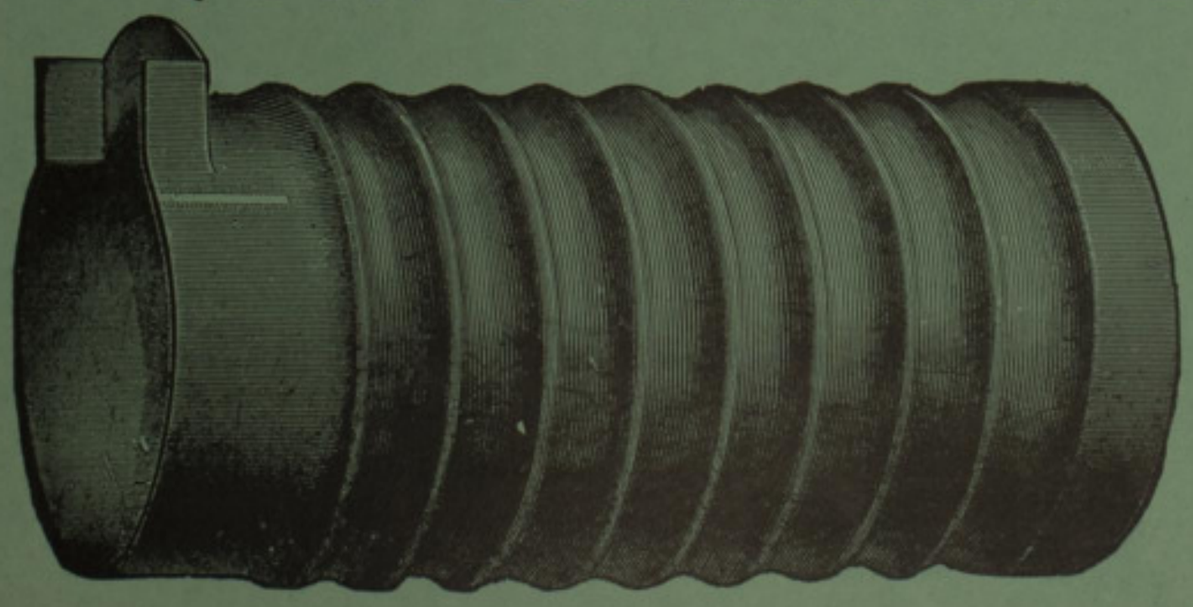

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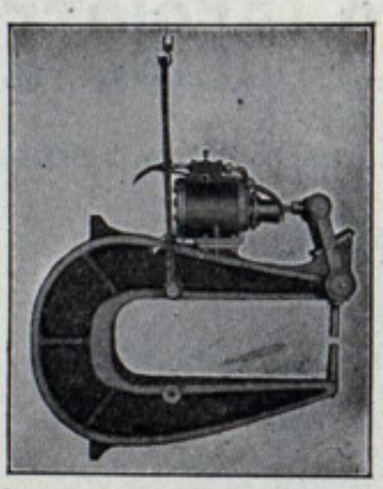

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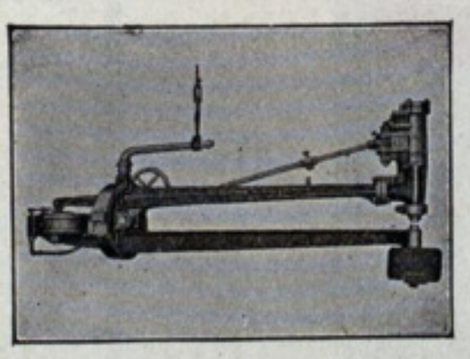

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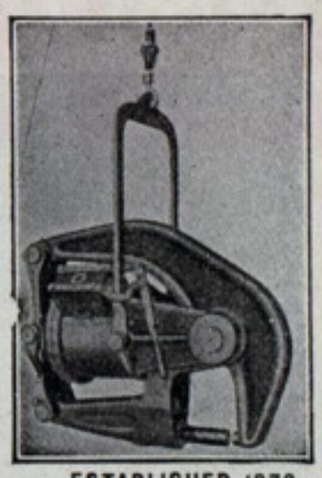

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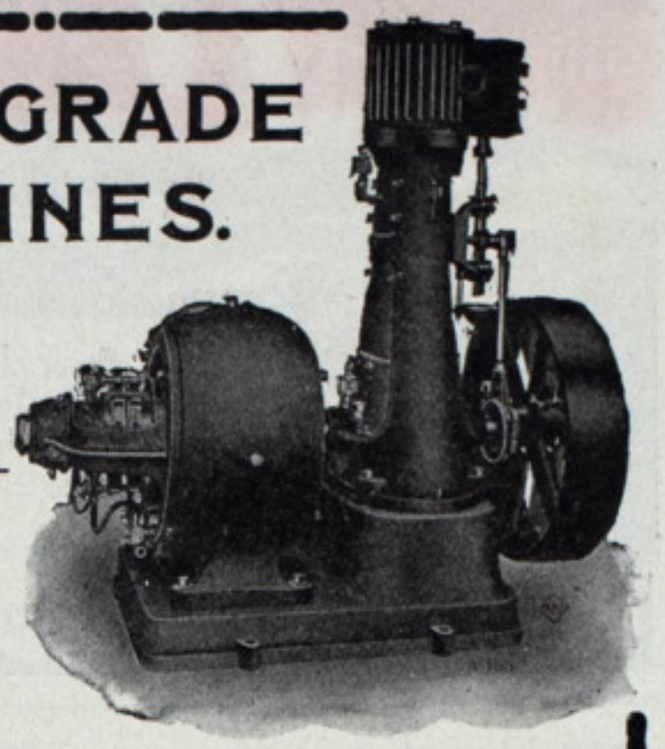

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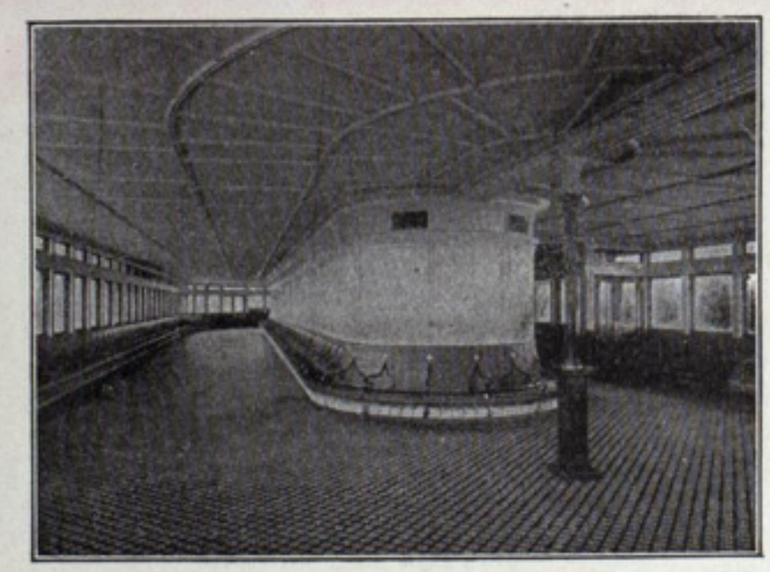

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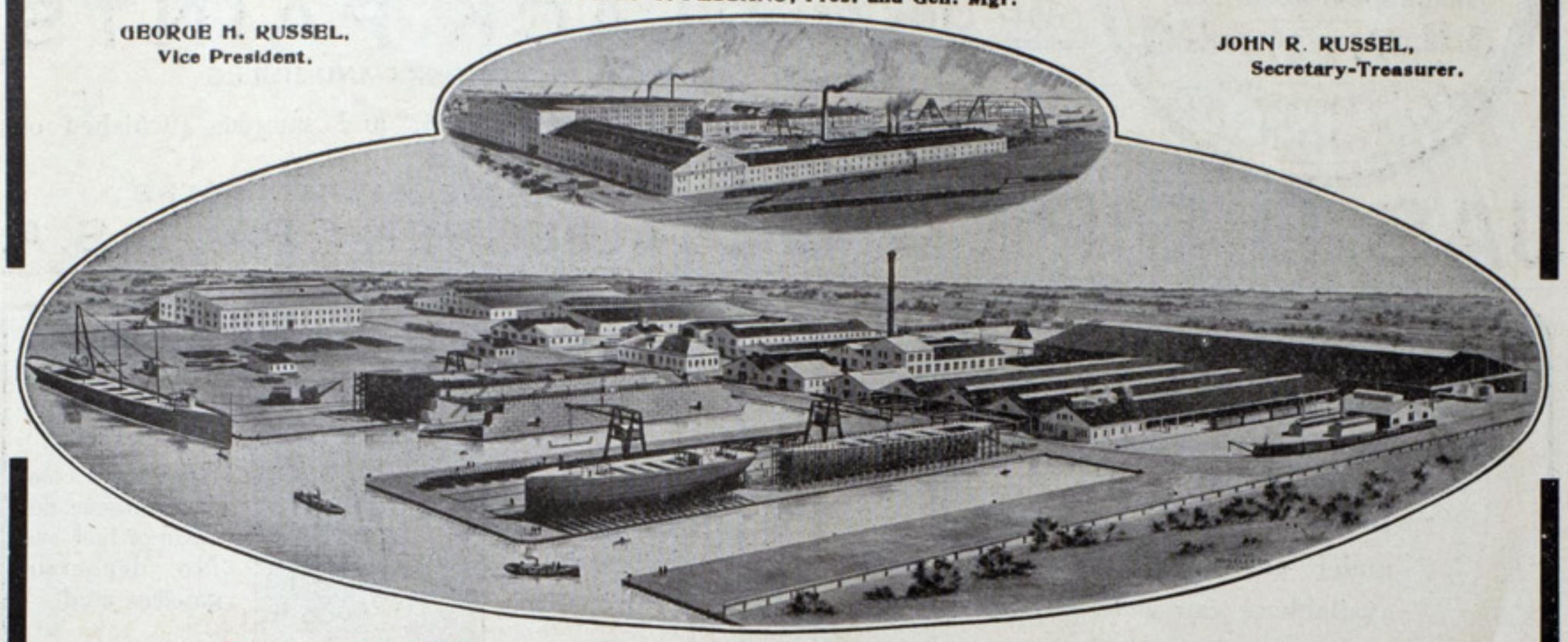

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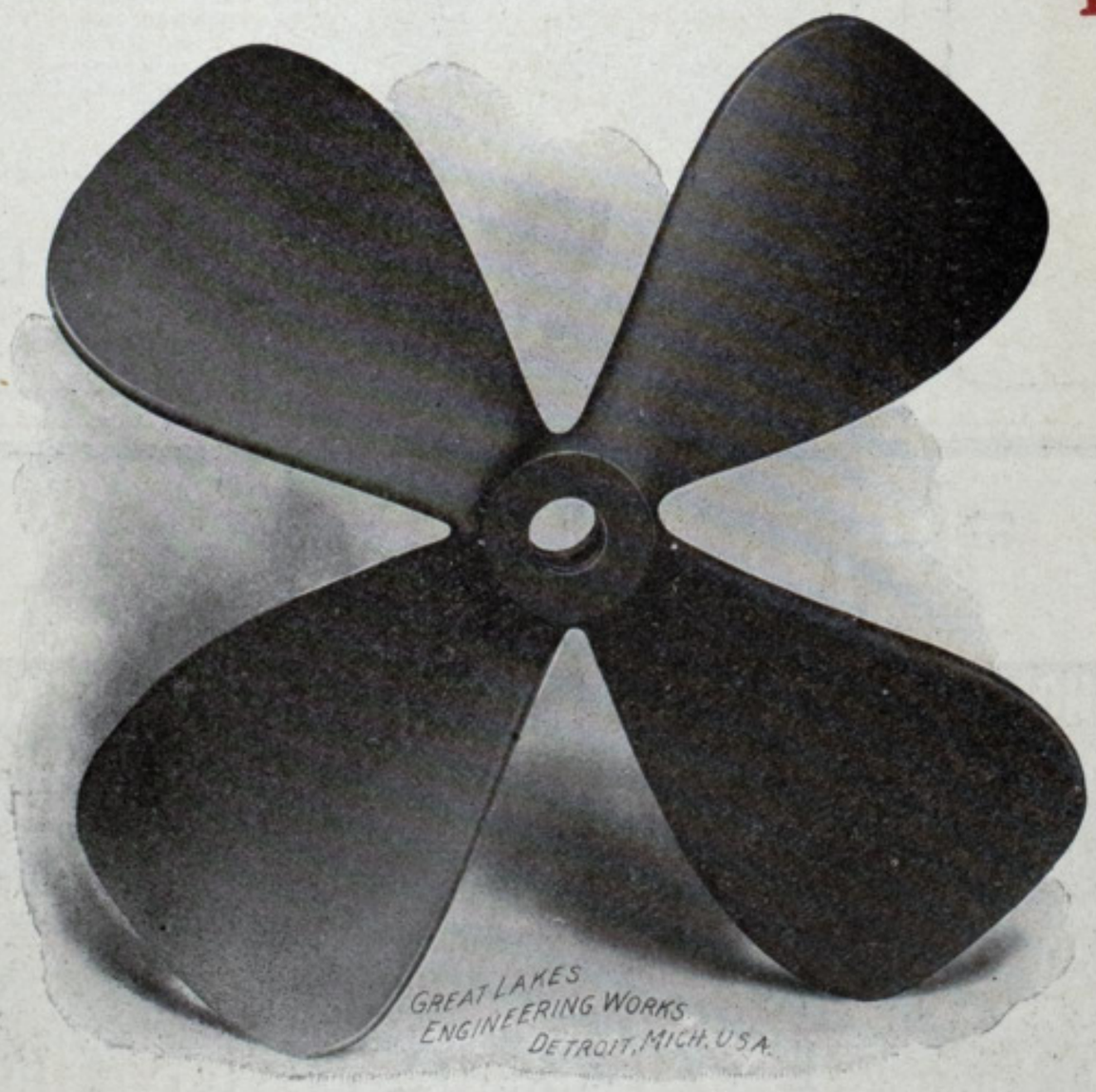

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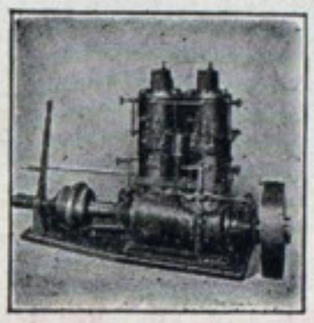

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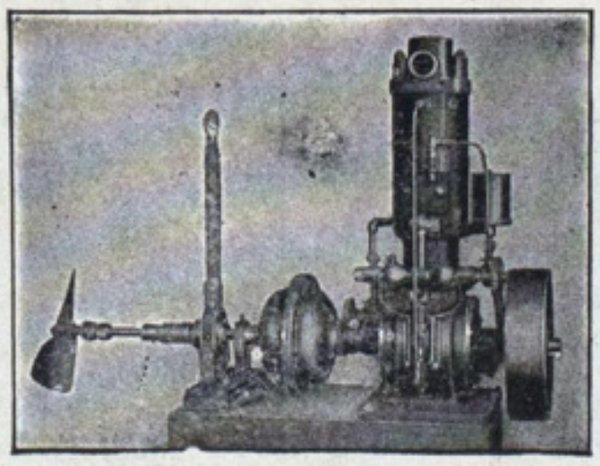

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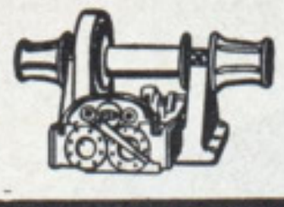

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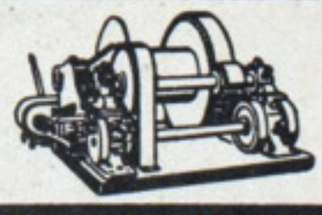

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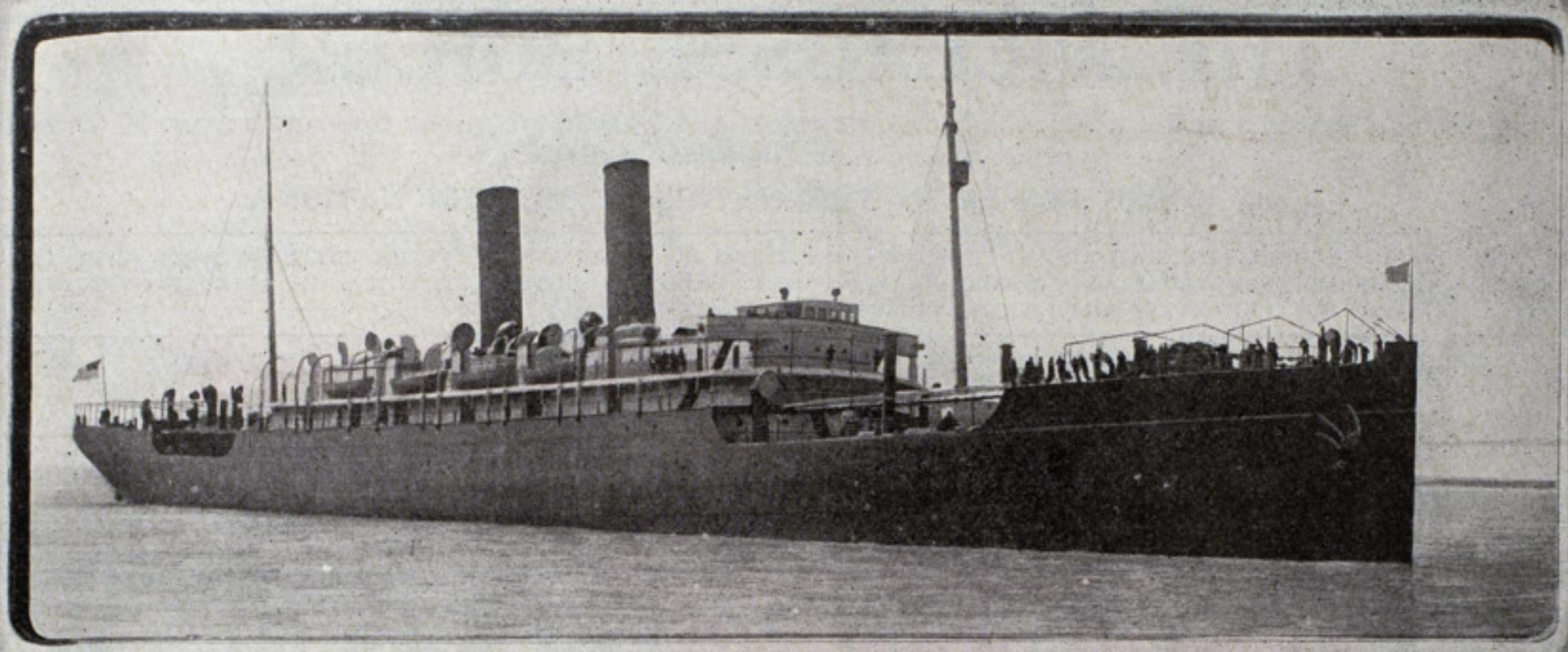

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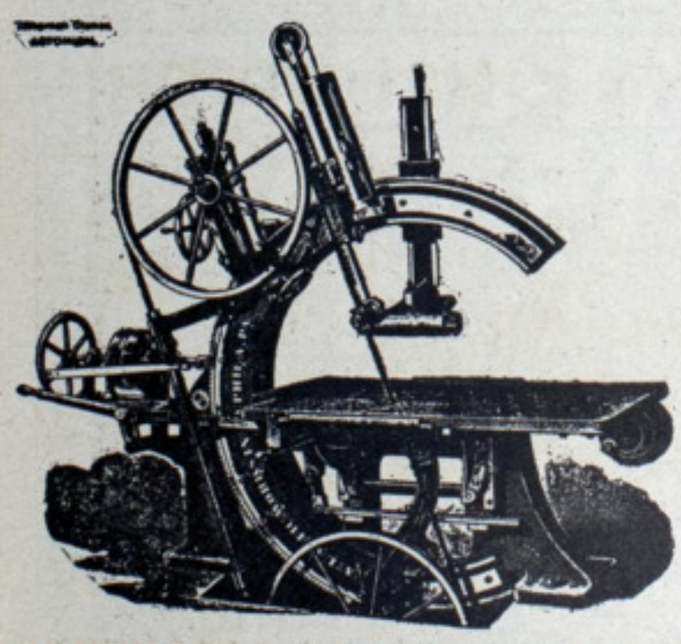

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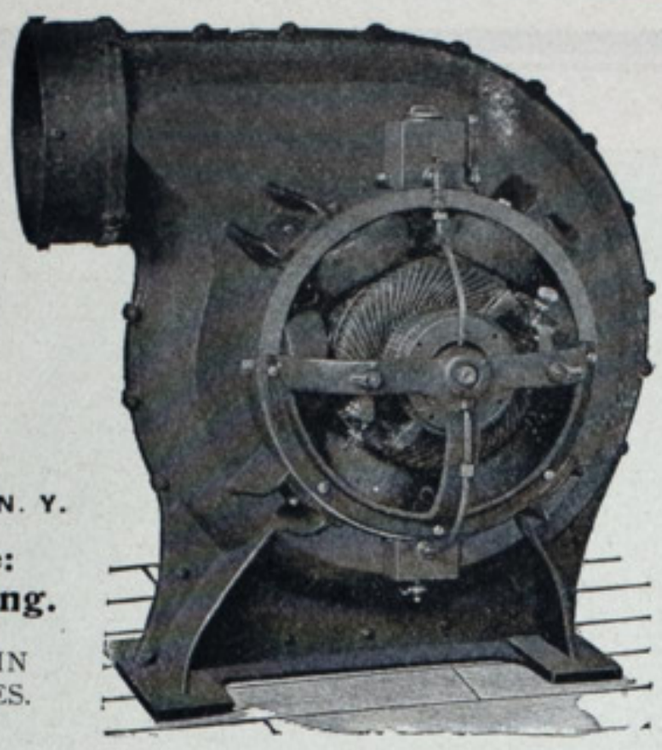

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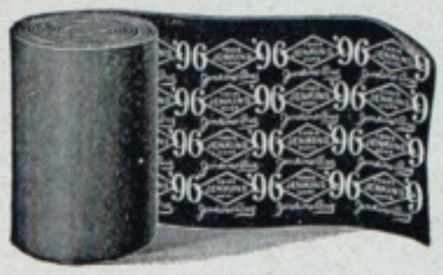

Insist on having Packing stamped with Trade Mark as shown in the cut, if you would have the genuine

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